THE BRITISH JOURNAL

OF

TUBERCULOSIS

Vol. V. April, 1911. No. 2.

ORIGINAL ARTICLES.

TUBERCULOSIS AND THE WORK OF THE WOMEN'S NATIONAL HEALTH ASSOCIATION OF IRELAND.

By HER EXCELLENCY THE COUNTESS OF ABERDEEN,

President of the Women's National Health Association of Ireland.

Two years ago the President of this Association was allowed to give the readers of the BRITISH JOURNAL OF TUBERCULOSIS some account of the inception of the Women's National Health Association of Ireland in 1907 and of its early effects.[1] We feel gratified by now being called on to give a further report of our stewardship.

The Mortality from Tuberculosis in Ireland.

The tuberculosis mortality in Ireland may be thus summarized:

1907. Deaths from all forms of tuberculous disease	11,679	
1908. Deaths from all forms of tuberculous disease	11,293	
Decrease		386
1908. Deaths from all forms of tuberculous disease	11,293	
1909. Deaths from all forms of tuberculous disease	10,594	
Decrease		699
Total decrease for 2 years		1,085
1907. Death-rate per 1,000 of estimated population—from all forms of tuberculous disease		2·7
1908. Death-rate per 1,000 of estimated population—from all forms of tuberculous disease		2·6
1909. Death-rate per 1,000 of estimated population—from all forms of tuberculous disease		2·4

[1] The article, "The Campaign against Tuberculosis in Ireland," by Her Excellency the Countess of Aberdeen, appeared in the BRITISH JOURNAL OF TUBERCULOSIS for January, 1909, Vol. iii., No. 1, p. 3.—EDITOR *B. J. T.*

Many causes have doubtless contributed to this marked diminution in the death-rate from tuberculosis, but we think we may believe that the very widespread awakening brought about by the visits of the Tuberculosis Exhibition in all parts of Ireland, followed by the establishment of branches of our Association intent on following up the impression made, has had a great effect. One hundred and fifty branch Associations, with 17,550 members representing all creeds, classes, and parties in Ireland, all working for a common cause, must necessarily make their influence felt, more especially when dealing with a quick-witted people like the Irish.

The work divides itself into three sections: (1) Work undertaken by the Central Association; (2) work undertaken by the local branches; (3) work outside Ireland.

The space at my command only allows me to give a list of the various departments undertaken, with a few explanatory words on each. We believe that the only way to attain our object is by trying to pursue it by every kind of method and through all means at our disposal.

I. WORK FOR WHICH THE CENTRAL ASSOCIATION UNDERTAKES DIRECT RESPONSIBILITY.

The Delivery of Health Lectures.

The Association undertakes to send Lady Health Lecturers to give courses of Health Lectures or First Aid Lectures to any Branch requiring the same, on payment of travelling expenses and lodgings and board for lecturer, and 5s. a lecture. In this way 591 lectures have been delivered during the year in different parts of the country. The Association has been fortunate in obtaining the help of a number of gentlemen in cases where single lectures are required, and hereby records its hearty thanks to the Right Hon. General Sir William Butler, the Right Hon. Sir Robert Matheson, Sir John Byers, Dr. M. F. Cox, Dr. Ashe, Dr. A. Boyd, Professor McWeeney, Dr. F. Dunne, Dr. Herron, Mr. G. Fletcher, Dr. T. T. O'Farrell, and Dr. Ninian Falkiner.

A series of written lectures has been prepared with sets of lantern slides to illustrate them, suitable for delivery by a local speaker, and which can be had at a fee of 5s. and postage expenses. These lectures include: (1) "Consumption: If Preventable, why not Prevent it?" by Dr. Herron; (2) "The Breath of Life: A Lecture on Pure Air," by Miss Mayo; (3) "Babies and Mothers," by Lady Coghill; (4) "A Lecture on Food," by Sir William Butler; (5) "The Health of the Child as affected by its Teeth," by Dr. McVittie; (6) "Diseases of Childhood," by Dr. R. T. Herron.

Distribution of Health Literature.

Over 378,048 leaflets, pamphlets, pictures, posters, and literature of all kinds bearing on health have been printed and distributed during 1909, and 80,500, in addition, through the means of the Health Caravan. £96 17s. 0d. worth of literature has also been sold, and we find picture posters and leaflets, illustrated by pictures, especially acceptable. We believe that a very free distribution of such literature, bearing on the management of babies, milk, food, clothing, prevention of disease, cleaning and disinfection, the improvement of houses, is necessary.

In addition to the leaflets and pamphlets, a series of three volumes entitled "Ireland's Crusade against Tuberculosis," and containing a collection of valuable lectures by leading medical men and other experts on subjects connected with the prevention and treatment of tuberculosis, has been published by Messrs. Maunsel at 1s. each, and copies of the same have been sent free to a large number of persons who are in a position which enables them to promote the anti-tuberculosis campaign, including the Chairmen, Secretaries, and Clerks of County Councils, Urban and Rural District Councils; the Dispensary Doctors throughout Ireland; Members of Parliament; Irish Peers; the Bishops, and a number of the Clergy of different Churches; The Queen's Jubilee Nurses; the Presidents and Secretaries of Local Branches of the Association; the Lecturers and the Members of the various Committees, etc. There are still a number of these volumes available, and they are full of valuable information. A generous donation of £300 for the publication and distribution of these educational volumes and other similar literature has been given by the Vice-President and Council of the Department of Agriculture and Technical Instruction.

The Travelling Health Caravan.

The "Phœnix" Travelling Health Caravan was organized by the Women's National Health Association of Ireland, with a view of carrying on the health campaign in outlying parts of Ireland. It has travelled through the counties of Donegal, Mayo, Galway, Limerick, and Kerry, practically covering all the congested districts. Bright and simple lantern lectures, and "talks" on health subjects, suitable for various classes of people and all ages, are given at each stopping-place. These lectures are either given by a medical lecturer, when we are able to secure one to accompany the van, or by a trained health lecturer.

Copies of the same charts, diagrams, and paintings as were exhibited at the Tuberculosis Exhibition are taken around by the caravan, together with other interesting exhibits; models and plans

for shelters, improved cottages, and inexpensive sanatoria, are also shown. Simple literature is distributed showing how disease can be prevented and stamped out by pure air and plenty of it, healthy houses, pure food, cleanliness, and temperate habits; and how, on the contrary, the best way to spread disease is through bad air, food which does not nourish, dirt, lack of air, unhealthy houses, and intemperate habits.

In addition, cookery demonstrations are given by a trained cookery instructress, who shows how inexpensively attractive nourishing food can be prepared with the simplest possible utensils.

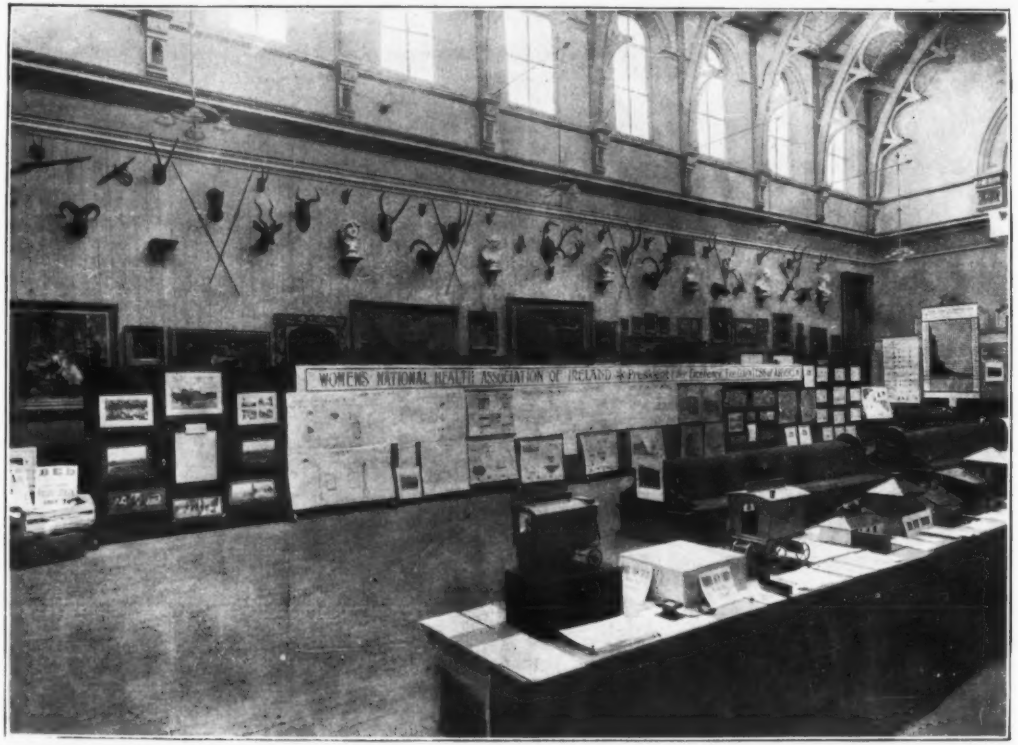
Special meetings for children are always made a feature of the caravan's visit. A gramophone accompanies the caravan, not only to provide variety for the visitors, but also to reproduce short lectures bearing on the health campaign. An additional covered van accompanies the "Phœnix" to convey equipments, and we call this the "supply waggon."

Small representative local committees are formed to prepare for the visits of the van, and to make its work effective. The kind co-operation of local medical men, local sanitary authorities, and local clergy, is especially invited, and in nearly all cases secured.

An advance organizer visits places along the route planned for the caravan a few days before its arrival, in order to help local committees to make preparations, and also to form branches of the Women's National Health Association of Ireland wherever possible. She also gives lectures to children and others when her organizing engagements so permit. The only expenses which local committees are invited to meet are: (1) Hospitality for the health lecturer; (2) hospitality for the cookery teacher; (3) hospitality for two horses and the driver during the van's visit; (4) any local printing and advertising that may be required.

The caravan custodian lives *in* the van. Local committees are requested to decide on the site where the caravan should stand during its visit, and to depute one or more of their number to receive the van on arrival, point out the place selected for it, and introduce the workers to their kind hosts and hostesses. Simple literature for free distribution is sent out beforehand if desired.

The welcome accorded to the caravan wherever it has visited has been remarkable, the only difficulty being to accommodate the crowds that attend. People walk miles over the mountains and through bogs in bad weather to attend the lectures. The Women's National Health Association of Ireland wish to acknowledge their indebtedness to the Pembroke Irish Charities' Fund, which has enabled them to purchase, equip, and to a large extent to pay the expenses of the caravan.



THE EXHIBIT OF THE WOMEN'S NATIONAL HEALTH ASSOCIATION OF IRELAND AT THE TUBERCULOSIS EXHIBITION AT YORK.

The Allan A. Ryan Home Hospital.

This Home Hospital has been rendered possible by the generosity of Mr. Allan A. Ryan, of New York, who undertook to place at the President's disposal £1,000 a year for five years for our anti-tuberculosis work. It was considered that a hospital for cases in the rather advanced or second stage of the disease was perhaps more needed than anything else in Dublin, as provision is now being made for the early cases at the New County Sanatorium, as well as at the Newcastle Sanatorium; and for the more advanced stages at the Hospice for the Dying, Rest for the Dying, and the Hospital for Incurables.

By the kindness of the Dublin Corporation, part of the Isolation buildings in Pigeon House Road is placed at the disposal of the Association, at the rent of one shilling a week, on the understanding that should a serious epidemic break out the patients would have to be removed within twenty-four hours' notice. The Association undertook to observe these conditions, and believe that should such a disaster as an epidemic break out that their friends will help them to provide for the sufferers under their care.

Four shelters were also donated to us by the North Kildare branch of the Association, to whom they were given by Lord Lonsdale, who sent them over from England. Two of these are used as day-shelters, and the other two as night-shelters, preference being given to North Kildare patients.

The Association has been fortunate enough to find a most efficient matron in Miss Brennan, who was Sister at the Richmond Hospital for some years, and who has had special opportunities of visiting and studying methods of work in various sanatoria, especially at the Royal Victoria Hospital, at Edinburgh, where also two Sisters who act under her, Sister O'Brien and Sister Stewart, have had a period of training.

Dr. Frank Dunne and Dr. Alfred E. Boyd have kindly undertaken to be visiting physicians, Sir John Moore and Dr. Michael Cox consulting physicians, Sir John Lentaigne consulting surgeon, and Professor E. J. McWeeney consulting bacteriologist.

The hospital accommodates twenty-four patients, and admission to it is much sought after. Forty-five patients have been admitted since the beginning of November, and in spite of most of them suffering from a somewhat advanced stage of the disease, very gratifying results have been obtained. Suitable cases are treated with tuberculin.

Holiday Home and Preventorium at Sutton, Co. Dublin.

The first of the disused coastguard stations taken over by the Association was opened as a Holiday Home and Preventorium for preventive cases on August 4, 1909, and during its first year received 124 residents, who have all much improved in health. They come from surroundings where they have been exposed to infection from tuberculosis, but are certified free from the disease themselves before admission. The funds for equipping this home and maintaining it for five months were provided by friends at Boston, Mass. Patients are admitted to this home on payment of ten shillings a week, but this sum can be reduced under special circumstances. They must have a doctor's certificate pronouncing them free of tuberculosis. The testimony of the inmates to the good results of a residence at the home are very gratifying.

Clifden Health Home.

The Bayleek Coastguard Station, Clifden, Co. Galway, situated in the most lovely position, overlooking the Atlantic, has been taken over by the Association from the Admiralty, to be used as a sanatorium for incipient cases of tuberculosis. The Galway County Council have voted £300 towards the expense of altering and equipping the buildings, and will also be responsible for ten beds, the nomination for these to be distributed in the county. The District Council of Clifden also passed a resolution unanimously approving of our project, and we are glad to know that these local bodies will be represented on our committee of management. Plans are now being prepared for the necessary alteration of the buildings for their new life-saving purposes.

Dublin Tuberculosis Nurses.

The Dublin Hospitals' Tuberculosis Committee was formed in November, 1907, to supervise a scheme of home treatment of consumptive patients by specially qualified Queen's nurses, under a system of voluntary notification, through the medical staffs of the Dublin Hospitals and the Poor Law Dispensaries. It is constituted of medical representatives, one being appointed by each of the ten Clinical Hospitals in Dublin. Last year the Committee was enlarged so as to embrace the Poor Law Medical Service, which sent four representatives. The nurses visit the homes of the patients referred to them, and, aided by the Dublin Women's National Health Association Samaritan Committee, put the sufferers in a position to carry out the medical instructions given to them. The nurses are provided by the Women's National Health Association Jubilee Nurses, and when a patient has no medical attendant, the Association also

provides for the supervision of the case by a fully qualified physician. 362 patients were visited by the nurses, and 7,275 separate visits were paid. This latter figure represents 140 average weekly visits; 87 patients (or 24 per cent. of the whole number) have shown signs of improvement; 24 patients (being 7 per cent. of the whole, or 27·6 per cent of those improved) have been able to return to their ordinary work during the year; 100 patients, chiefly through the exertions of the nurses, have been admitted into sanatorias, hospitals, and kindred institutions; 87 children of parents suffering from tuberculosis have been sent to the country through the Fresh Air Fund; 20 cases, which had been exposed to the infection of tuberculosis, but which were certified by their doctor to be free from the disease, were sent to the Holiday Home, Sutton; 16 families have been removed to more healthy houses; 36 insanitary houses have been reported to the Public Health Authorities; 126 rooms have been disinfected; 16 patients or members of their families have had work procured for them. The report of Mrs. A. M. Sullivan, chairman of the Samaritan Committee, shows that £102 17s. 6d. has been spent during the year; 107 families received nourishment, milk, eggs, meat, etc.; 98 patients received clothes, shoes, bedding, etc.; 17 families are having rent paid for them, while the breadwinner is at the Royal National Hospital at Newcastle, Co. Wicklow, or in the Dublin Unions; 5 children are being boarded out while the mother is in hospital; 2 children have been sent to schools or institutions after their parents' death.

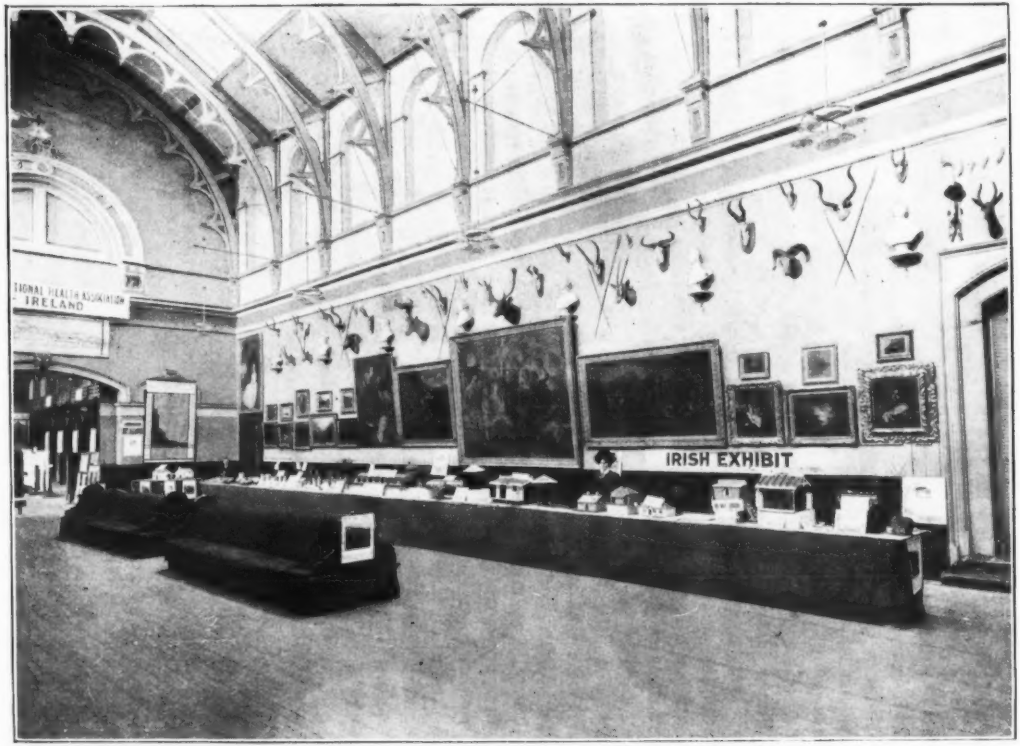
A Study of Individual Tuberculous Cases.

In addition to the individual cases cared for by the Dublin tuberculosis nurses, a large number of cases are referred to the Central Association by branches throughout the country. Up to recently we have not kept a record of such cases, but we are now looking upon this part of our work as a definite section.

This part of our work is deeply interesting, but it requires a considerable amount of time and thought to deal with each patient according to his or her need, and it is also a department which needs considerable financial support, as the families of those who are referred to us so often require help during the breadwinner's illness. The satisfaction, however, of being able to watch definite improvement, and the restoration of patients to their families with renewed health, is very gratifying, and to indicate its extent it may be mentioned that during the last six months we have had to deal with eighty cases.

Tuberculosis Classes.

Tuberculosis classes, on the lines of those initiated in America, are being carried on in Belfast and Dublin. Dr. Marion Andrews has



MODELS AND DIAGRAMS OF THE WOMEN'S NATIONAL HEALTH ASSOCIATION OF IRELAND IN THEIR TRAVELLING EXHIBITION, AS SHOWN IN THE EXHIBIT AT YORK.

published a very interesting paper[1] on the Belfast class and its results, which can be had on application to the Literature Secretary of the Women's National Health Association of Ireland.

Co-operation with the Royal National Sanatorium at Newcastle.

For some months the Association has been in correspondence with the Medical Superintendent at Newcastle Sanatorium, with a view to being of assistance to patients leaving the Sanatorium. At the request of the Medical Superintendent, the Association sends one of its nurses to meet patients at the station, to look after them during the few hours that may elapse in Dublin, until their train home departs. This conduces greatly to the comfort of some of those who are not yet very strong. The Association further undertakes through its branches to do its utmost to help families of patients returning from Newcastle to make adequate sleeping provision for them on their return, and, if possible, to find light work suitable for convalescence.

The Dublin Pasteurized Milk Depôt.

This depôt shows most excellent results as regards the health of the infants, for whom it supplies pasteurized and modified milk according to medical prescription. Most of the infants sent to the depôt are weakly, and are sent there by their doctors because their mothers cannot mind them. Distributing depôts have been started in different quarters of the city. Books of milk tickets can be obtained for distribution to the poor mothers through nurses and doctors. Ordinary pasteurized milk can also be obtained from the depôt. In view of the prevalence of epidemics which have been traced to contaminated milk, and the difficulties of obtaining pure milk, we believe that the adoption of the use of pasteurized milk is much to be desired.

A good deal of controversy regarding the value of pasteurized milk as a food for infants has taken place lately in the newspapers, and we venture to think that the outcome of that newspaper correspondence has resulted in demonstrating pretty clearly the value of the system as attested by the work of the depôt, supported by the testimonies of Dr. Lumsden's personal experience, and Professor McWeeney's investigatious. It seems sufficient again to repeat Dr. Lumsden's statement that out of eighty babies which he has sent to the depôt in an ailing and sickly condition, only four died, and that the death-rate amongst these infants was 4·6 per cent. as compared with the average death-rate in Dublin of 14·4. Dr. Ella Webb,

[1] Andrews, Marion B.: "The Class Method of Treating Pulmonary Tuberculosis." Wellington Quay: Dollard, Printing-house, Dublin City.

Dr. Lily Baker, and Dr. Cassidy, who have so kindly undertaken weekly visits to meet the mothers and babies at the depôt, give similar testimony.

It must be remembered that the milk is not merely pasteurized for the use of infants, but modified to resemble human milk as much as possible, under the direct supervision of doctors, and that no infant is given this milk without medical direction. Miss Murphy is now the very capable Superintendent of this depôt, and will be glad to receive visitors, the hours between two and four o'clock being most convenient.

The expenses for running the depôt are considerable, but bear favourable comparison with those incurred by various municipal milk depôts which we have had the opportunity of examining. Expert visitors from a distance compliment the Committee on the economic management. Nevertheless, the deficit amounted to £443 4s. 7d., and it remains to be seen if the citizens of Dublin consider that the saving and building up of infant life is worth this expense. We sincerely hope that the time will come when the provision of pasteurized milk will be a feature of all dairies, and that such provision will be made for the purity of the milk supply for general distribution as will render pasteurization unnecessary for ordinary household use.

Refreshment Van in Phœnix Park.

A refreshment van selling hot and cold pasteurized milk and other nourishing and wholesome food and drinks has been established by the Women's National Health Association in the Phœnix Park during the winter, especially for the benefit of the football players.

II. WORK CARRIED ON BY THE BRANCHES.

Appointment and Maintenance of Additional District Nurses.

Forty extra district nurses have been appointed in Ireland during the last two years through the means of the Women's National Health Association, including the two special Dublin tuberculosis nurses, thirty-one of these nurses being Queen Victoria Jubilee Institute nurses, four health workers, and three nurses who have been appointed independently by branches of the Association, and two babies' clubs nurses. The local efforts made to raise funds to maintain these nurses are worthy of all praise, and means that over £3,000 is being subscribed locally through the branches for this all-important purpose.

Improvement of Dwellings.

This is a subject promoted by many branches by diverse methods, and several Home Improvement schemes are in operation, with

gratifying results. The building of the new Labourers' Cottages is proving a great blessing.

Nourishment or Samaritan Funds for Tuberculosis Patients.

Funds for the relief of necessitous patients have been established in connection with the following branches: Ballymena, Ballycastle, Arklow, Armagh, Ballinrobe, Ballymoney, Banbridge, Belfast, Bray, Carlow, Bagenalstown, Carrick-on-Suir, Castlecomer, Clones, Cork, Castlefin and Clady, East Donegal, Drogheda, Dublin, Howth, Kingstown, Rathgar and Terenure, Castleknock, Dundalk, Enniscorthy, Galway, Kilkenny, Killarney, Londonderry, Eglinton, Faughan Valley, Buncrana, Monaghan, Clontibret, Nenagh, Celbridge, Ballymore-Eustace, Maynooth, Naas, Newbridge, Robertstown, Sallins, Straffan, Athgarvan and the Curragh, Donadea, Boston, Clane, Omagh, Portadown, Portrush, Monasterevan, Strabane, Tandragee, Tralee, Tipperary, Tullamore, Wexford, Wexford Urban Branch. Buncrana and Faughan Valley are working to establish similar funds.

We know definitely of forty-six patients sent to Newcastle and other sanatoria by means of collections made by branches last year, or by Women's National Health Association nurses. And others have been sent through the kindness of private friends.

School Breakfasts and Dinners.

These are being carried on under different schemes in many districts. These meals vary from a cup of cocoa daily for a penny a week to a plate of meat and potatoes.

School Disinfection.

The following branches have arranged for the disinfection of schools with the consent of the school managers, and disinfecting sprayers have been supplied either directly by branches, or by the school managers: Ballymena, Ballycastle, Ballinasloe, Belfast, Bray, Carlow, Bagenalstown, Castlecomer, Clogher, Coleraine, Cookstown, Cork, Innishannon, Buncrana, Newtowncunningham, Castlefin, East Donegal, Howth, Shankhill, Donegal, Killarney, Londonderry, Eglinton, Faughan Valley, Maryborough, Navan, Kells, Trim, Enfield, Ratoath, Mullingar, Multyfarnham, Nenagh, New Ross, Athgarvan and Curragh, Ballymore-Eustace, Roscrea, Skibbereen, Strabane. The Belfast and Killarney branches have been particularly successful in this undertaking. The latter branch arranges for the disinfection and weekly cleaning of eighteen schools; and at Belfast the disinfecting sprayers introduced by the Women's National Health Association resulted in the Public Health Committee taking up the matter and

distributing 151 sprayers ; these are used in 194 schools twice a week, benefiting some 40,000 teachers and children.

Pure Milk Supply.

A number of branches are interesting themselves in this matter, and are making experiments in regard to the best way of bringing a pure milk supply within the reach of all classes of the community. The branches having babies' clubs naturally lay special stress on this question, and take measures whereby the milk supply to babies can be guaranteed as pure. Killarney and Limerick have started special milk shops.

Vegetables and Fruit Growing.

Some of our branches are making a feature of encouraging and guiding vegetable and fruit growing, obtaining plants and seeds at wholesale prices by the order of a number of their members. This has been started with the object of teaching people to provide greater variety of food, and instruction is also given as to different ways of cooking the vegetables and fruit there grown.

Organization of Local Sanatoria.

At Maryborough Lady Coote has been successful in raising sufficient funds to build a delightfully planned annexe for tuberculosis patients at the Queen's County Infirmary, and we hear of further steps taken at Ennis for the establishment of a cottage sanatorium. Our branches have also taken much interest in promoting separate provision for tuberculosis patients in workhouse infirmaries, and it is very gratifying to know from a recent return of the Local Government Board that 15,000 beds are now provided for such patients by the various workhouse infirmaries.

Local Entertainments and Amusements.

Our branches are giving increasing attention to this part of their work, believing that the brightening of country life and the providing of interesting occupation in the home to be an important feature of health work.

III. ANTI-TUBERCULOSIS WORK UNDERTAKEN OUTSIDE IRELAND.

During the past few months the Association has received gratifying evidences of its reputation outside Ireland, in the invitations it has received to send exhibits of its work, accompanied by practical demonstrators, to various places in Great Britain. The first invitation thus received was from the Edinburgh Tuberculosis Exhibition, in

connection with the Tuberculosis Conference held there last June, at which time also the annual meeting of the National Association for the Prevention of Consumption was held. The Irish exhibit was under the charge of Miss Molloy, and attracted so much attention that urgent invitations for the exhibit were received from York, Bolton, and Hull, and also from the Glasgow Ideal Homes' Exhibition, which was held for three weeks during September.

The committees of all these exhibitions showed their estimation of the work of the Women's National Health Association by undertaking to pay all expenses in connection with the transit of the exhibits, and also the expenses of one of our lecturers and a custodian. At Glasgow both Miss Molloy and Miss Manderson were in charge, and the Glasgow School Board paid us the compliment by deciding to send detachments of the school-children—over twelve—to see the exhibit, and to listen to short lectures. Father Ryan, Father Hughes, and others of the Catholic clergy in Glasgow also sent a number of the children attending the Catholic schools, and various sodalities and societies also attended.

The attention of the public has been drawn to the splendid effort now being made by Wales to organize an Anti-Tuberculosis Campaign as the National Memorial to King Edward, £150,000 having been subscribed for the purpose already, and £300,000 being aimed at.

Professor Jones, who has so kindly lectured for us, has resigned his professorship at Belfast, in order to become secretary of the fund, and he paid us the compliment to ask our Association to send one of its organizers to help in starting their work.

A selection of exhibits from the Irish Tuberculosis Exhibition under the charge of Mr. Fitzpatrick, and accompanied by Miss Manderson as lecturer, has been touring in Wales since the middle of January.

THE TUBERCULIN DISPENSARY LEAGUE.

BY THE COUNTESS OF MAYO,
President of the League,

AND

WILLIAM CAMAC WILKINSON,
M.D. LOND., F.R.C.P.,

Chairman of the Executive Committee of the League; Weber-Parkes Prizeman; late Lecturer on Medicine of the University of Sydney, N.S.W.; Physician Royal Prince Alfred Hospital; Author of "The Treatment of Consumption."

THIS new league justifies its existence, because it is exploiting a new method of dealing with tuberculosis, especially pulmonary tuberculosis among the poor, in a way never before attempted, and its work does not overlap, and is not overlapped by the work of any other society or system. The primary essential and distinctive purpose of the Tuberculin Dispensary League is to bring within reach of the friendless poor some simple and effective method of treatment.

Public Assistance for the Tuberculous Poor.

Can sanatoria greatly help the poor? is a question that can only be answered in the negative. If the friendless poor can be treated for tuberculosis in sanatoria, there is no need for Tuberculin Dispensaries. If they cannot, Tuberculin Dispensaries become an urgent necessity. A cursory consideration of the problem will prove why sanatoria cannot greatly help the poor who suffer from tuberculosis.

Tuberculosis kills at least 55,000 persons every year in England and Wales, and there are always at least four times as many persons—220,000—victims of tuberculosis who need treatment; and of these the vast majority are too poor to have treatment at sanatoria. Even if sanatoria could treat half of the cases, is nothing to be done for the remainder?

The cruel fact is that sanatoria can only treat about 20,000 cases out of this 220,000, so that 200,000 are left without proper treatment. The treatment of 20,000 cases at sanatoria cannot cost less than £600,000 a year; the cost of treating all the cases at sanatoria would be about £6,000,000 a year. Now, if sanatoria, stretched to their uttermost, can only deal with 20,000 cases, it is high time to look about for some simpler means of relieving this huge contingent of 200,000. Beyond a doubt the Tuberculin Dispensary is at present the only means of granting this relief; and for many, many years Tuberculin Dispensaries will have far more than they can do without interfering in the least with existing sanatoria. Even if the work of sanatoria were

doubled and trebled, the majority of sufferers must seek relief from some other system or die. In truth, there are sanatoria enough without adding others, because the sanatorium system is too irksome, too costly, and too uncertain in its results to benefit the poor in their extremity; the sacrifices are too great and the successes too few. The benefits of sanatorium treatment do not last very long, if the victims have to return to their ordinary avocations and conditions of life; and life at a sanatorium may even demoralize a man and engender the seeds of discontent. The inevitable loss of work and wage alone disqualifies the sanatorium as a reasonable system for those who have to live upon the daily wage, except indeed under the German system. Still, one may tolerate and even applaud the provision of sanatorium treatment for 20,000 cases at a cost of £600,000 a year—certainly at the hands of charity, but not at the public expense—without in the same breath condemning 200,000 victims to remain without any satisfactory treatment.

The Rôle of Tuberculin Dispensaries.

Tuberculin Dispensaries are to be the means of giving simple, direct, cheap, and effective treatment to the huge majority inevitably neglected and rejected by sanatoria. Treatment at the dispensary is direct and specific as distinct from the so-called rational or hygienic dietetic system practised at sanatoria. Specific treatment embraces the use of the various forms of tuberculin which have been presented as a free gift to a thankless generation by one of the world's greatest benefactors, Professor Robert Koch. At the Tuberculin Dispensary, also, tuberculin is exploited as the invaluable and indispensable agent in diagnosis in accordance with the views first enunciated by Koch in 1890, which have year by year attracted greater and greater attention and support. In fact, tuberculin is used in a routine fashion as the diagnostic agent in all suspicious or doubtful cases, especially among contacts who have been exposed to a serious risk of infection. For diagnosis both Koch's original method and Von Pirquet's method are used. Calmette's ophthalmic reaction is discarded for the best of reasons: that if tuberculin be subsequently used for treatment, the conjunctival reaction repeats itself for some time in a most objectionable way after each subcutaneous therapeutic dose. The routine use of tuberculin in diagnosis greatly enhances the value of tuberculin as a remedy, because the tuberculosis can thus be detected in the very early stage, when no less an authority than Professor Koch has taught us that the disease can be cured with certainty by means of tuberculin. Other observers have corroborated this opinion of Professor Koch, which appeared in the historic communication of 1890.

But the advocates of tuberculin are not so foolish as to base their

advocacy of this remedy merely upon the results obtained in these early cases, even though there may be almost 100 per cent. of successes, because in this stage success often attends no treatment at all, and occurs very often after prolonged sanatorium treatment. It then becomes a question of apportioning successes and failures, and we may readily remember our successes and easily forget our failures, or leave others to record them. The value of tuberculin treatment is most clearly shown in the later stages of pulmonary tuberculosis, especially when severe laryngeal lesions, ulcers, and granulomata have developed. It is then possible to watch directly the curative action of the remedy in cases that are otherwise quite hopeless. It is a matter of history that Moeller, of Belzig, and others had the truth of the value of tuberculin as a curative agent first forced upon their attention, when they tentatively used tuberculin in cases that had resisted sanatorium methods. Tuberculin brought about improvement that was as startling as it was unexpected. It was then suggested to them (Camac Wilkinson) that if tuberculin succeeded when sanatorium methods failed, tuberculin might also succeed when sanatorium methods succeeded. Moeller has now convinced himself of this fact, and the quondam advocate of sanatoria is now the most outspoken advocate of tuberculin. It is also certain that sanatoria may succeed when tuberculin fails, but it has been no easy matter to convince sanatorium authorities of the real nature of these cases and the reason of the failure. Tuberculin is absolutely specific in its effects, and can influence favourably no other infection than tuberculosis. Unfortunately, pulmonary tuberculosis may be combined with infections of other origin, chiefly streptococcal, pneumococcal, and influenzal, when injections of tuberculin may do distinct harm. These mixed and secondary infections have the further objection that they increase the over-sensitiveness to tuberculin (anaphylaxis). As yet no specific treatment of these mixed infections has been found to yield any uniformly satisfactory results, and until such specific treatment of the mixed infections has been evolved, *sanatorium treatment is quite the best for these mixed infections.* Accordingly for the present, sanatoria should be specially devoted to the treatment of these mixed infections (Petruschky), while all forms of pure tuberculosis should be treated with tuberculin. Sad to say, sanatorium authorities cling to topsy-turvydom, and seek for the early cases which are best treated with tuberculin, while they reject the cases of mixed infections which may be enormously benefited by sanatorium methods.

A casual observer may argue that if this be true, a sanatorium is surely the best place both for the treatment of tuberculosis by tuberculin and the treatment of the mixed infections. This is a stock argument that appeals to the unthinking, and runs right through the

facile writings of those who have no sense of proportion and forget the limitations of time and space and money on our poor little planet. If time and work mean nothing, and sanatorium treatment can be had for the asking, certainly the sanatorium is the place for all of us ; but why not build " castles in the air," and fill them with patients ? If all the hospitals in England were turned into sanatoria, we could not house all the cases of tuberculosis. No ; any scheme for dealing with tuberculosis must recognize facts ; and the facts stated in the earlier part of this article prove that sanatoria can never deal with the serious problem of tuberculosis in the community.

Practical Measures.

It only remains for us to show that Tuberculin Dispensaries offer a simple, safe, economical, and effective method of treating the disease in the poorer classes of society, and it must follow that Tuberculin Dispensaries will be established in every community as the best solution of this great national problem—at least at the present time. The proof lies, not in vain theorizing, not in pandering to prejudice, but in practice. Already there are enough of these Tuberculin Dispensaries in existence for everyone to form an honest and independent opinion upon certain features. The system is very simple, and the popularity of the institutions alone is presumptive evidence that the system is safe and useful. Already many scores of patients have been treated with very great benefit. It is within the mark to say that for tuberculin treatment the cost need not exceed £2 for each case treated. It has also been shown that at least 80 per cent. of the cases can be treated without any sacrifice of wage or work. Time alone can show whether the results will last ; but there is much evidence in favour of the view that the results will last longer than sanatorium results. Surely, then, there is reason and truth and wisdom in the statement that if the money now devoted to sanatoria for London were devoted to Tuberculin Dispensaries, not one thousand, but actually *twenty thousand*, or even *thirty thousand* sufferers could be treated each year, and the individual results would be better. Surely " a consummation devoutly to be wished."

A FARM COLONY FOR CURED CONSUMPTIVES.

By R. W. PHILIP,
M.A., M.D., F.R.C.P., F.R.S.E.,

Physician to the Royal Infirmary, Edinburgh, and to the Royal Victoria Hospital for Consumption, Edinburgh; Lecturer on Clinical Medicine and Diseases of the Chest in the Edinburgh School of Medicine.

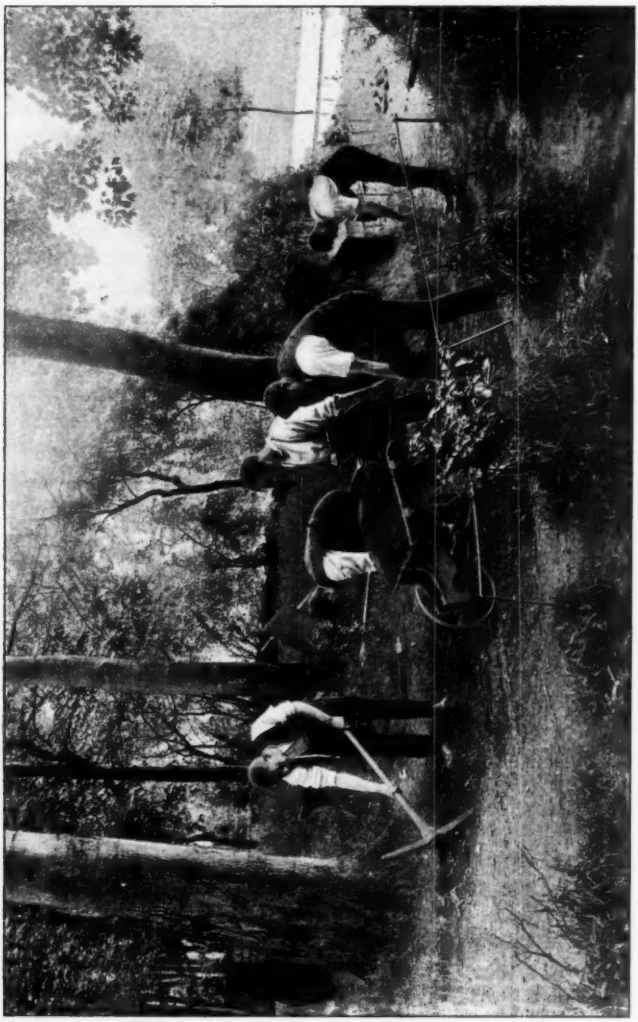
NOTHING is more remarkable than the complete change of thought regarding the conduct of the tuberculous patient's life from day to day which has taken place during the past fifteen years. I shall not stay to speak of the striking change of front which is represented by aërotherapy. The facts of aërotherapeutics are sufficiently familiar. With the aid of aërotherapy the clinical course of tuberculosis has been entirely altered—the aspect and feelings of the patient, and most of the features of the disease.

Of gradual growth, from about the same time, has been the reversal of opinion as to the degree of rest required for the patient. It has come to be seen that, while rest is helpful, and, indeed, essential at certain times, the prolonged continuance of resting treatment is fraught with unsatisfactory results. While the patients may seem to improve, not a few fallacies lurk behind the mask. They may put on weight, but it is not always a healthy increase. Often they become heavy and corpulent, but this is commonly mere fat. The process is akin to the fattening of animals for the market. With it all, the skin textures remain pallid and atonic, the muscular tissues small and soft, and the individual himself far from physiologically fit.

In the early days, when the Victoria Dispensary for Consumption was first commenced (1887), I was immensely struck with the consistent improvement of the majority of the patients, notwithstanding the fact that many of them had to come long distances to the Dispensary. This led me to a more formal elaboration of activity as a definite part of curative treatment. Classes were instituted for physical treatment and respiratory exercises. The patients used to attend for regular training with regard to healthy posture and respiratory movement. Further, measured walks, of varying amount and gradient, came to be prescribed just as we prescribed medicines —walks radiating from the Dispensary through the public parks, and up the slopes of Arthur Seat. The results made a profound impression on me, and led to a complete change of outlook.

There has been, for the most part, a much too limited conception of pulmonary tuberculosis, as if it were primarily, or at least chiefly,

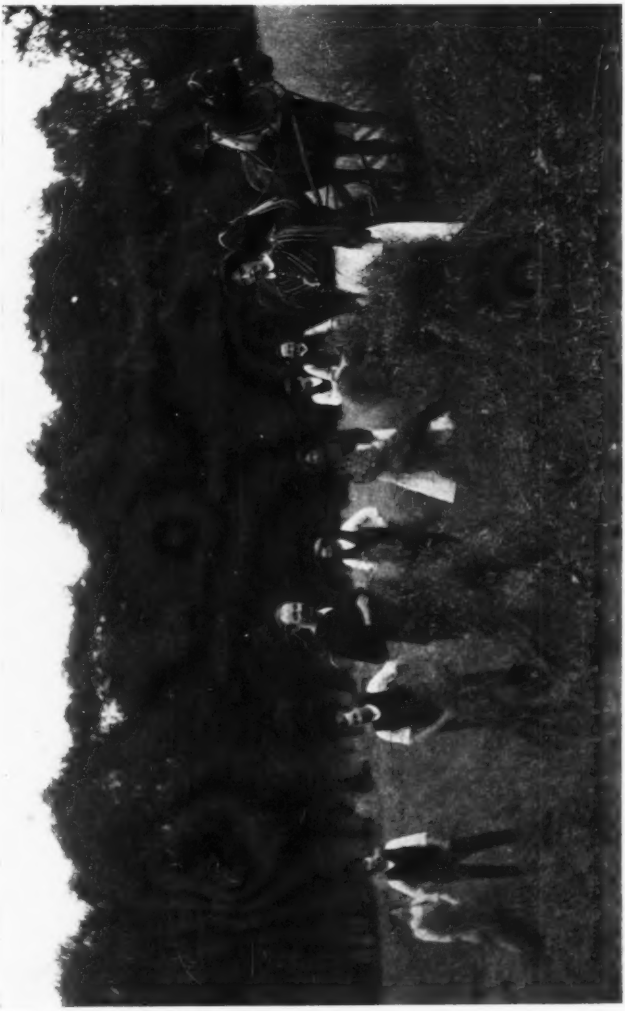
a disease of the lungs. This is a great mistake. Tuberculosis implies progressive intoxication. Often before the lungs have been seriously



AT THE HOSPITAL: STAGE IIID.—ROAD-MAKING.

infected—certainly before there is a discharging lesion—the toxines of the tubercle bacillus have begun to exert their vicious influence, particularly on neuro-muscular structures. I have elsewhere

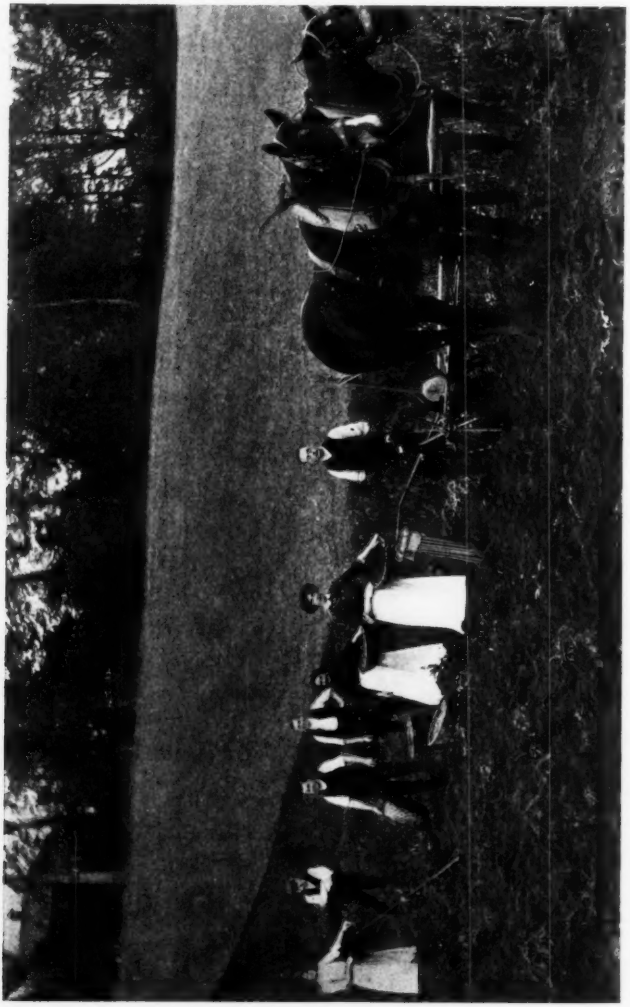
elaborated the view that the tuberculous toxine is essentially a muscle poison. Such systemic intoxication shows itself by symptoms of



AT THE FARM COLONY: "COLONISTS" REAPING AND BINDING.

tiredness, languor, disinclination for mental and bodily effort, and circulatory and gastro-intestinal disablement. The evidence of progressive intoxication is both visible and palpable in the progressive wasting of muscles and trunk.

So long as the systemic intoxication is pronounced—whether with traceable, active lung lesion or not—the indication for treatment



AT THE FARM COLONY: COLONISTS GATHERING THE FIRST POTATOES.

is mainly rest. Rest tends to stay the local lesion and the dissemination of toxines, and limits the output of energy by the exhausted muscular system. Contrariwise, in proportion as the local lesion is arrested, and systemic intoxication has become correspondingly

limited, the wasted muscles tend to recover themselves. Nothing repairs muscular tissue so certainly as natural movement. This is, in large part, the *motif* for the institution of regulated activity. The amount of activity must be regulated with exactness in each case. There must be a careful estimation of dosage from day to day. Activity in excess may reawaken a local process, and the awakening may result in excessive discharge of toxines through the system. Such renewal of intoxication is fortunately determinable by evidence which is readily available to the physician. Indications for the reduction of activity may be found in loss of appetite, malaise, headache, increased rapidity of pulse-rate, and irregular swinging of temperature slightly above the normal line.

It is because of the possible occurrence of untoward effects that it is of first importance that the patient undergoing treatment by movement should be under careful supervision. Such treatment can most suitably be initiated in a hospital, and continued in a farm colony, under the direction of a trained observer, who increases or diminishes activity according to the indications before him. The adjustment of dosage becomes a matter of much scientific interest.

In connection with the Edinburgh Scheme, treatment by regulated movement has been in vogue for a good many years at the Hospital (sanatorium), and has recently been further elaborated through the establishment of the Farm Colony. For the majority of the patients the regimen of the Hospital proves quite sufficient. Most of them, having reached the highest grade of activity, are discharged from the Hospital in better condition than commonly they have hitherto been in throughout their life. In the case of some 25 per cent. of the patients, a prolongation of the supervised graduated activity is necessary to obviate the tendency to relapse. *It was for this class of persons that I conceived the Farm Colony.* The Colony might be described as a *continuation class* or *post-graduate school* suited to the requirements of a certain number of individuals who need more prolonged supervision and direction than is convenient at the Hospital.

The scheme of physical treatment as carried out at the Royal Victoria Hospital is sufficiently well known, and is illustrated in the accompanying plates. The following are the main points :

I. Resting Stage (*white badge*).—On admission to the Hospital all patients are prescribed complete rest, lasting from a few days to several weeks, according to the individual case.

II. Stage of Regulated Exercises (*yellow badge*). — This includes— (1) Walking various distances, from a quarter to five miles : (*a*) on the level ; (*b*) on sloping ground. (2) Various respiratory exercises once or twice a day. (3) Other forms of movement to improve carriage of shoulders, head, chest, etc.

III. Stage of Regulated Work.—The work is chosen with a view to utility and with due regard to the patient's individual case and his past trade. This stage is subdivided into four Grades—*A*, *B*, *C*, *D*. IIIA. (pale blue badge).—Picking up leaves, papers, and other light rubbish in the grounds; knitting; sewing; drawing. IIIB. (green badge).—Emptying garden waste-boxes, and assisting to carry away rubbish; carrying light baskets for various gardening purposes; light painting work (gates, fences, furniture, etc.); wiping shelters; setting tables, and laying cloth in patients' dining-room; cleaning silver; cleaning brasses, towel-rails, and taps. IIIC. (deep blue badge).—Raking; hoeing; mowing; sweeping leaves; drawing two-wheeled barrow with assistance; other gardening jobs requiring a similar amount of exertion; heavier painting work; sweeping shelters; scrubbing floors; cleaning boots; cleaning knives; assisting in laundry, folding clothes, etc.; washing and drying dishes. IIID. (red badge). — Digging; sawing; carrying heavy baskets for various gardening purposes; wheeling and drawing full wheelbarrow, and other heavy gardening work; drawing bath-chair; bathing other patients; mangling; window-cleaning; polishing floors; sweeping and cleaning courtyard; carpentering; joinering; attending boiler; engineering. It should be noted that in Classes IIIA., IIIB., IIIC., and IIID., patients make their own beds and go errands if necessary.

At the Farm Colony the graded system is maintained, as at the hospital, under the direction of a medical superintendent, who is assisted by a working grieve with practical experience of farming. The Colony was opened in the spring of 1910. Operations were carried out during the year, and already the "colonists" have prepared most of the ground, and fenced enclosures for various purposes. The first harvest has been gathered both in potatoes and oats (*vide* Plates). The vegetable and flower garden has done well. An excellent series of hen-houses and runs has been elaborated by the workers, and both eggs and birds are affording lucrative returns. Pig-rearing is proving highly successful, and has already realized substantial profit for the Colony.

The closest co-operation exists between the Royal Victoria Hospital and the Farm Colony. The Colony is recruited with workers from the Hospital in the way already indicated. Waste food-stuffs and the like are sent from the Hospital to the Colony. In return, fresh foodstuffs, both vegetable and animal, are transferred from the Colony back to the Hospital at market rates. Thus throughout the past season the Hospital patients have been constantly supplied with potatoes from the Colony, and from time to time with fresh pork, eggs, etc.

The "colonists" themselves are trained systematically under the

medical eye in different departments of domestic and agricultural economy. It is my expectation that, when the necessary fixation of recovery has been effected, the "colonists" will find themselves not merely restored to a high platform of health and vitality, but prepared to adapt themselves—in *practical* fashion, and not as a counsel of perfection—to an active, open-air country life, either at home or elsewhere throughout the Empire.

THE DISPENSARY SYSTEM FOR THE CONTROL AND PREVENTION OF TUBERCULOSIS.

By HALLIDAY G. SUTHERLAND, M.D.,

Medical Officer of the St. Marylebone Anti-Tuberculosis Dispensary; late Medical Superintendent, Westmorland Consumption Sanatorium; formerly Resident Physician, Royal Victoria Hospital for Consumption, Edinburgh; and Pathologist, Liverpool Hospital for Consumption.

Principles and Methods.

The principle of the Dispensary System lies in the full recognition of the fact that, so far as the mortality from tuberculosis is under consideration, the chief sources of infection exist in the homes of the people in our great industrial centres, from which it follows that every proposal is inadequate which fails to cope with the disease at its source. An Anti-tuberculosis Dispensary may be defined as an institution, free to all, to which patients who are not already under a medical practitioner may go for examination, diagnosis, and treatment. From the Dispensary a physician and nurse visit the homes of the patients, who are thus educated in open-air treatment and in the protection of others by the observance of a few simple precautions. The ignorant consumptive is the source of infection at home and abroad; the educated consumptive is a danger to no one. The medical officer also examines all those who have been in contact with the patient, and thus the early cases are diagnosed and cured while they are yet curable. From the Dispensary suitable cases are sent to sanatoria for cure, advanced cases to special hospitals, and children are taught the value of fresh air and sunlight. In every department of its activity the Dispenary works in intimate association and co-operation with the Public Health Authority and with various

charitable agencies. The Dispensary is the central bureau for the collection and dissemination of all information regarding tuberculosis, and the centre of all scientific and philanthropic effort against this disease.

The Co-ordination of Effort.

In its totality the Dispensary System represents all the various elements which from time to time have been urged as the most important weapons in the anti-tuberculosis campaign; but, whereas alone these different entities have been more or less passive, *qua* eradication of this disease, they are co-ordinated by this scheme into an integral part of an aggressive warfare.

Sanatoria.

Sanatoria represent in themselves an attempt to cure or alleviate the actual disease, the result of infection, by the most scientific treatment. To be effective this treatment should be not less than of six months' duration, so that, if their educative influence be judged by the numbers passing through their gates, this last must always be in inverse ratio to their curative value. Again, it is proved beyond all question that sanatorium treatment, so far as lasting results are concerned, is of little value except in the earlier stages of the disease, and among the working classes these are not the cases to seek medical advice until it is too late. When the patients do seek advice and desire treatment the following sequence is frequent: Some public body or friendly society is willing to provide sanatorium treatment, and if the medical certificate be left to the family attendant to fill in, it usually happens, and in good faith, that an unsuitable case is sent for a time to a sanatorium. The patient gets worse, comes home to die, and open-air treatment is blamed. "If he had not gone, he would not have died." Such reasoning may be quite wrong, but is very human. On the other hand, the conversation between the sanatorium doctor and the patient's friends is apt to remind one of Shaw's remark: "We are not a profession, we are a conspiracy." In this way thousands of pounds of public money are annually wasted in England. Again, even if there was, which there is not, sanatorium provision for all the early cases in this country, it would be quite impossible to send these away—at least, those who are breadwinners —unless provision be made for the wife and children, which raises a larger issue. The fact remains that if the early cases are recognized, the great majority of these can be cured in their own homes, and that without interference with their occupation, so that there is only a residuum who require sanatorium treatment. Moreover, even if the early cases be cured in sanatoria, there yet remain the sources of infection to provide a constant stream of patients for these institu-

tions. The sanatorium movement has made most progress in Germany, where there are now 11,000 beds for the working-classes. Even there the sanatorium movement has been found to have its limitations, and the dispensary system is gaining ground. So far as the working classes are concerned, the Anti-tuberculosis Dispensary is the one organization with the power of not only sorting out the suitable cases for sanatorium treatment, but of also eradicating the source of infection and correcting the environment which produced the disease.

Hospitals for Advanced Cases.

A realization of the greater danger of infection to others during the later stages of the disease has led many to advocate isolation as the most appropriate means of controlling the spread of tuberculosis. By segregating advanced cases in Poor Law Infirmaries, in hospitals for advanced cases, in homes for the dying, and in special wards of fever hospitals, it has been argued that the home is freed of the risk of infection, the more so if disinfection be carried out when the patient is removed. Such a proposal as this might be feasible if pulmonary tuberculosis were a disease of definite duration and divisible into stages which might be classed as infective and non-infective. All the evidence points to other conclusions. In the majority of cases the duration of the disease may be five, ten, or fifteen years, and *pari passu* with its advance are stages of infectivity and non-infectivity. Even where attempts are made to isolate cases that are actually dying, in practice these attempts are unsuccessful. Of all patients admitted to such hospitals, it is safe to say that two-thirds return to their homes to die, and the numbers are naturally greater when such hospitals are far removed from the area they are intended to supply. A study of the admissions and discharges to and from the phthisical wards of any Poor Law infirmary is proof-positive of the futility of attempted isolation *per se* as a preventative measure. The same patients spend the last months of their lives journeying in and out of these wards, and reinfecting their homes if disinfection was carried out. In the present state of the law, under the Infectious Diseases Act, Poor Law patients suffering from a dangerously infectious disease can be detailed and isolation made compulsory.

Compulsory Detention.

While this section of the Act could probably be held to include advanced pulmonary tuberculosis, its application would most certainly defeat any value even of temporary isolation, as patients would refuse to enter the infirmary under these conditions. Under the dispensary system, patients with advanced disease, living in homes where nursing is difficult and the danger of infection great, are urged to enter such

hospitals in their own interests. Should they return, they return to a home under the constant supervision of the dispensary, and the Medical Officer of Health can be advised as to the necessity or not of frequent disinfection. Again, if the dispensary be notified of all admissions to these special wards of infirmaries, even a partial stay there of the patient is of considerable value, as in the interval his home has come under the operations of the dispensary, the contacts have been examined, and the relatives prepared to adopt precautionary measures when the patient returns.

Public Health Aspects.

From the point of view of the Public Health Authority, notification of phthisis, whether voluntary—which has proved useless—or compulsory, is utterly ineffective unless prophylactic measures are immediately to follow. Disinfection of an infected home is simply a fetish, if the source of infection continues, and the visit of a sanitary inspector or health visitor who leaves a printed card is not in the same category with the constant supervision by a whole-time specially trained dispensary staff. Moreover, for the examination of contacts in the "march past" of the patient's family, expert medical skill is essential.

The Rôle of the Tuberculosis Dispensary.

The Dispensary System works in intimate association with the Public Health Authority, for whom it is a tuberculosis directory in any administrative area. Its value in the City of Edinburgh is indicated by the fact that over 60 per cent. of all notifications of phthisis to the Medical Officer of Health are sent by the dispensary.

Again, the Dispensary should work in association with the educational authority, more particularly in the provision of open-air schools. At the Dispensary the latent stigmata of pulmonary tuberculosis are detected in children, apart from those who are suffering from active disease. These former are the tuberculous seedlings, the potential advanced cases of the future, unless their resistance be raised under simple hygienic measures before they enter the critical age-periods of life. For economy alone, the medical supervision of these open-air schools should be in relation to the Anti-tuberculosis Dispensary, being the agency that can best detect the material and deal with it in relation to the sources of infection.

The Elements of Success.

In our fight against tuberculosis, our methods must be commensurate with the strength and position of a disease whose manifestations are numberless and protean, extending from the one extreme of life to the other. A hopelessly limited clinical outlook has been

responsible for the foredoomed failure of past and present—for the most part—schemes for the eradication of this disease. Every scheme, to be successful, whether it be voluntary, in relation to public health administration, or to invalid insurance, must represent the elements of the Dispensary System. If invalid insurance is simply to be an extension of the existing policy of friendly societies, it is only a further waste of public funds so far as the eradication of tuberculosis is affected.

The Dispensary System has reached its fullest activity in Edinburgh, in which city it was created in 1887 by Dr. R. W. Philip, and during the past decade its activities have been marked by a fall of over 42 per cent. in the mortality from phthisis, according to the records of the Public Health Department, as against a fall of over 17 per cent. in London during the same period.

The Inevitable Failure of a Limited Outlook.

From time to time enthusiasts are apt to agitate for the wholesale adoption of some special method of treatment, which, however valuable it may be in certain phases of the malady, is of little consequence to the larger issue of prevention. The most recent example of this is the agitation for tuberculin treatment at special institutions for this purpose. Now, tuberculin is admittedly an invaluable adjunct to treatment, whether it be at home, in a sanatorium, or in dispensary and outpatient practice; but its value depends on the careful selection of cases, and, in point of fact, it is contraindicated in mixed infection, this last being present in the majority of cases of open pulmonary tuberculosis. If, again, tuberculosis were a disease whose cause was unknown, it would be justifiable to concentrate on therapeutic measures. The actual position is that we are dealing with a disease whose cause is known, and in which the predisposing factors have been ascertained. It is a protean disease, whose manifestations are apparent from the one extreme of life to the other, and in this conception of tuberculosis is the condemnation of any partial and limited measure which disregards the constant stream of infection that flows through our great industrial centres, and makes no effort to attack the sources of the evil. In our campaign against tuberculosis, our measures must be commensurate with the distribution of the disease, and herein is the success of the Dispensary System assured.

SANATORIA FROM WITHIN.

By a Patient.[1]

There are to-day nearly 600,000 persons in the British Isles suffering from pulmonary consumption and from other forms of tuberculosis. There is a hospital sanatorium and other suitable hygienic accommodation (nursing-homes, open-air bungalows, etc.) for, say, between 5,000 and 6,000 of these sufferers. These figures do not pretend to be other than merely rough and approximate.

In the absence of compulsory notification, accurate figures are impossible, but, broadly speaking, there may be suitable accommodation available for about 1 per cent. of the patients in the United Kingdom. Much medical and lay interest is now being manifested, somewhat tardily it must be confessed, in the prevention and cure of phthisis. And while eminent consultants, experts, and authorities are somewhat grandiloquently lecturing or publishing books about the conquest of consumption, it is just possible that in the interim of this flood of eloquence and cascade of statistics some little public service may be rendered by briefly and dispassionately considering sanatoria from *within*, from the sad and personal and—may be—unscientific, but, at any rate, intensely human point of view of the average lay consumptive patient, an "old hand" in the regiment of "lungers."

Now, at the outset, one gratefully recognizes that there are many efficient and admirable sanatoria in the United Kingdom, many conscientious and able medical superintendents, and assistant resident medical officers, men who are fighting the white scourge with splendid energy, with superb skill and enthusiasm, and who are filled with a burning zeal to alleviate human suffering, and to succour the sorrowing afflicted.

It may possibly be conceded, however, that until lately we were not grappling with the actualities and with the potentialities of the

[1] Unsigned articles have hitherto not been allowed admission to this journal. An exception to this rule seems justified in the present case. The paper here printed anonymously was found among the documents left by a well-known public man who recently died from tuberculosis after a long fight to overcome the disease. The communication is of much interest and value as indicating the point of view of a gifted patient who had exceptional opportunities of forming, from personal experience, opinions regarding many matters connected with the problem of tuberculosis. The friends of the worker have considered it desirable that his name should not be published, as no explicit permission was left by the patient. We desire, however, to acknowledge our indebtedness to Mr. Ernest L. Walford for his kindness in rendering assistance in arranging for the publication of this important article in our pages.—Editor *B.J.T.*

dread disease quite as brilliantly in this country as were authorities in Germany and the United States.

After all, there has been only one Dr. Koch, whose demise patients the world over deplore. In this country there seems to have been considerable want of co-ordination and system in the methods of prophylaxis and treatment. Each sanatorium doctor does that which is right in his own eyes, and the spirit of co-operation, of solidarity, of a uniform and harmonious policy, is not always to be found. It has even occasionally happened (to the obvious detriment of the patients' interests) that the two, or more, sanatorium physicians have not seen eye to eye with one another, not only medically, but personally as well. A M. S., for instance, will avoid antipyretics, and his assistant will use them ; each and every sanatorium doctor has his own definite views—not unseldom somewhat divergent from those of his colleagues—on graduated rest and exercise ; the significance of auto-inoculation, diagnostic tests, super-alimentation, rectal *versus* oral thermometry, how to treat hæmoptysis (one will prop you up, and the other will lay you recumbent), mixed infections, specific therapy ; opsonic indices, and especially on the question of dosage and interval in the administration of tuberculin. Each Tuberculosis Congress, Conference and Lecture seems more or less, if not too negative, at any rate largely to modify the results of previous years' and months' researches. Of course, this is but natural, seeing that our knowledge of tuberculosis is fluid, and this flux and reflux is greatly preferable to stagnation ; but for the keen patient trying hard against odds to get well it occasionally means "confusion worse confounded," and sometimes leads to a certain mental chaos which may vitiate the efficiency of treatment and hamper the healing processes. There is a lack of harmony between the varying curative measures employed in different sanatoria (although there is, of course, a laudable identity of interest, and, it must be added, certain broad hygienic and dietetic principles seem necessarily common to all sanatoria).

Each specialist, moreover, differs from his brother-consultant, often on the very essentials of curative methods—especially on questions of immunity and climate — and a few days after not unseldom contradicts his own *obiter dicta*.

With regard to the general practitioner, one notices that, broadly speaking, cases are being "spotted" earlier than when the present writer first entered a sanatorium, two years ago. But the clinical history of at least 50 per cent. of the tuberculous patients one meets leads one to the conclusion that a special searching examination in the various manifestations of tuberculosis, and a definite period of study in a chest hospital or a sanatorium, should be a *sine qua non* for

a medical degree; moreover, that the attendance at post-graduate courses on diseases of the respiratory organs constitutes for many practitioners a noteworthy desideratum.

Many cases one meets in sanatoria have apparently had their earlier symptoms sadly misread, their clinical histories gravely misinterpreted by the "family doctor" at some period or another. Suspicious, recurring "influenzas," and significant periodic colds and coughs, have been passed over and ignored—by both patient and doctor—until it is *too late*. "Too late" then is the trouble diagnosed, and these fate-fraught words pursue patients to the destined and inevitable end, dog them until a merciful death ensues. And that is one of the remoter reasons, perhaps, for the unpopularity of sanatoria among patients diagnosed as tuberculous when no longer in the earlier stages of the disease. To many it means the beginning of the end: *too late* has the "writing on the wall" been interpreted; the stable-door has been securely barred and locked after the horse has already bolted; and over the portals of the institution are seen, not the motto "Fight and Hope" (for there is no last stage in consumption), but the flaming words, "All hope abandon, ye who enter here." Beyond doubt, however, the profession and the public have alike been of late so powerfully stirred to a recognition of the gravity of the situation, that faulty and belated diagnosis will in a very few years be a thing of the past.

Patients and Doctor.

We now proceed to a consideration of certain factors which may tend to make sanatorium régime suspect with phthisical patients, so that, despite the disparity between the number of patients in these islands on the one hand, and the amount of suitable accommodation available on the other, some sanatoria are seldom quite full, and "waiting-lists" are the exception rather than the rule. I pass over the alleged depressing effect of isolation in the country. Any patient of average intelligence must realize that "back to Nature" is the first call he must answer if he wishes to get well; though, of course, it may be quite possible successfully to carry out treatment in or near a town after a preliminary training course at a sanatorium.

The primary fault may lie with the resident medical officers, and not unseldom does. Very many, one gratefully admits, are splendid men and brilliant doctors—men who fully bear out Pottenger's weighty aphorism that the personality of the medical superintendent is often the only factor which stands between the life and death of the patient—men who are imbued both with the letter and with the spirit of sanatorium ideals as outlined or carried into practice by Walther, Dettweiler, Hermann Weber, Kingston Fowler, Latham,

Trudeau, Walters, Paterson, and others. Others, again, are excellent fellows and charming cheery companions, but they do not seem to trouble about keeping their knowledge up to date. Others are led to the work along the line of least resistance by having weak lungs themselves, and find their posts "soft billets," with exceptional opportunities for novels, golf, the "open road," pipe, gossip, and natural history—a good time—within limitations and in seclusion. However, it must be understood that the "arrested" tuberculous doctor is often, owing to his personal knowledge of consumption and ready, intuitive sympathy, a great asset to a sanatorium, and is much loved by his patients, for "a fellow feeling makes us wondrous kind."

But the type of medical superintendent which discredits both the man and his noble profession is the doctor who is harsh, autocratic, and despotic—the physician who thinks that his position entitles him to ride roughshod over the sensibilities of his patients, with a fine disregard at times for the most elementary principles of tact and kindliness and refinement.

This type, moreover (which is rapidly dying out), seems to encourage, rather than to deprecate, the formation among patients of invidious cliques and sets. It follows as a natural corollary, from the temperament of this class of sanatorium physician, that in the few institutions where men of this type may be in charge, favouritism, partiality, and preferential treatment, are not infrequently to be met with. As a result of this bias, some patients are waited on "hand and foot," studied in every possible way, given every privilege, every liberty, and every advantage of diet, comfort, and attendance. They are for ever in the limelight; they monopolize the place and the staff, holding up the traffic of the institution. They become the pivot around the axis of which the sanatorium life turns, and moves, and has its being. While others, on the other hand, not so fortunate in gaining the goodwill of the potentate, if not neglected, are at any rate treated in a more or less mechanical, perfunctory, and off-hand manner, and are in receipt of what we may call the irreducible minimum of attention, and, so far as the "extra touch" of love and sympathy is concerned, that touch which may make all the difference between happiness and depression, especially to a febrile bed-patient, that, alas! is systematically denied them. Preferential treatment in sanatoria is, however, one is pleased to say, the exception, and *not* the rule. It would be sad indeed were it otherwise, for sickness levels all, and a sanatorium, of all places, is emphatically not the place for undue recognition of caste, position, and social status.

Others, again, tar all their patients medically with the same brush, and lack the sense of the "personal equation." New patients are

dropped haphazard into the strange and unaccustomed sea of sanatorium life, to sink or swim. They are mystified as well as ill when they come in, but nothing is adequately explained to them. They do not know "the ropes," and are left to shift for themselves. Often a kindly nurse or maid is the first anchorage. It would be well, perhaps, for some sanatoria physicians to realize that when a patient comes to a sanatorium for the first time he is often lamentably ignorant of elementary hygienic and dietetic principles. Why should sanatorium doctors presuppose any hygienic knowledge, however elementary, seeing that through ignorance of these principles patients have more often than not contracted the disease? Let doctors presuppose nothing in the first instance, except absolute lack of medical knowledge on the part of their patients. For many patients, blissful in an ignorance which scarcely does justice to their alleged intelligence, seem to be under an impression that when they enter a sanatorium and are placed under immediate and personal medical supervision they are forthwith whisked on to magic ground, that they cannot possibly "catch cold," that they can do no hygienic wrong. They regard themselves, as it were, in sanctuary, in a city of medical refuge, treading on consecrated ground. Their feet, they imagine, are immediately set upon "high places"—set firm upon the "royal road" which leads back to health. They are speedily disillusioned. It would be well for some patients to remember the old saying, "If I am not for myself, who is for me?" And if not now, when? Wise indeed was the laconic advice tendered me by a friend and fellow-patient when I entered a well-known sanatorium: "It is very good here, but of course *you must look after yourself* to a certain extent." On the other hand, the fact must not be overlooked that many eminent sanatorium doctors take nothing for granted, and from time to time—some publicly, others in the privacy of the bedroom—give their patients valuable little homilies on treatment and prophylaxis, explaining simply but fully curative methods, the importance of "rest hours," the significance of temperatures, the avoidance of infection, and the doctrine of auto-inoculation, thus helping on that affectionate, loyal, and harmonious co-operation between doctor and patient, without which sanatorium treatment may well become a snare and a delusion.

(It may be added that some sanatorium doctors refrain from discussing symptoms and treatment with their patients more than is absolutely necessary, on the ground that discussions of this nature induce hypochondria. Broadly speaking, however, this experience is negatived by tactful and sympathetic medical superintendents, though it must readily be confessed that some introspective and morbid patients make a silly fetish of weight and temperature, and are a

bore both to doctors and their fellow-patients. The prognosis of such patients is almost invariably unfavourable.)

A consideration of occupation (graduated labour, intensive gardening, etc.) in some and of recreation in other sanatoria is beyond the scope of these fugitive notes, which are intended to deal with the point of view of the bed-patient rather than of the convalescent. Suffice to say that, in addition to walking, reading, and the "magazine club," croquet, clock-golf, and an occasional game of cards (not for money stakes), are popular in most sanatoria for paying patients. There is, of course, considerable ground for Bonney's apprehension lest some patients may in course of time degenerate into a condition of gossipy incompetence. However, a patient can never be really idle if he be busy trying to get well.

Patients and Nurses.

The question of adequate nursing and attendance in sanatoria is an important and complex one, though, of course, for the first-stage patient, whose temperature is normal, and who is up to all meals, it constitutes a matter of secondary, rather than of vital, importance. Sanatorium-trained nurses seem to be the great desideratum to-day—women with a special flair, a special keenness and intuition for pulmonary tuberculosis. More night-nurses, too, are wanted. As the result, moreover, of two years' residence in various sanatoria, I am somewhat in favour of a certain number of male nurses and attendants. These could look to the shelters, the reclining-chairs, the hot-water bottles, and the rugs and cushions of patients of both sexes—for there is much "fetching and carrying" in sanatoria which is decidedly too arduous for women nurses—and would, moreover, be of special value in blanket-bathing male patients put on absolute "typhoid" rest in bed, and in drying slightly febrile male patients who are allowed to go to the bath. They would also help with the sputum-flask and mugs. This plan obtains, I believe, within limitations in some sanatoria ; it seems deserving, however, of a wider application. There is also a certain amount of "valeting" required, which the average slightly febrile tuberculous male patient is scarcely fit enough to do for himself, and is not always willing to request a much-worked nurse to do for him. It must not be overlooked that the apparently limited scope of nursing in sanatoria (it is not really limited) often prevents the better type of woman nurse—the nurse with a vocation—from entering these institutions. It would be disloyal, unchivalrous, ungracious and discourteous on the part of a patient who has received much personal kindness and sympathetic attention from individual nurses in various sanatoria, and who has spent many happy hours and

made many valued friends in these institutions unduly to labour this point.

It will, however, quite possibly be within the recollection, both of doctors and patients, that nurses are not entirely immune from the mental and psychological characteristics of their sex; that they are occasionally somewhat hysterical, wayward and capricious, unduly swayed at times by their emotions, and not always free, when under the influence of sentiment, from the suspicion of favouritism and the taint of partiality. All honour to a sanatorium in the nurses' staff-room of which I saw these words, among other rules: "Nurses must be attentive, considerate, and respectful to all patients, without regard to personal likes or dislikes, or to the social status of the patient."

It is a pity that some nurses seem to hold that the sanatorium was made for them, and not they for the sanatorium. On the whole, however, I am strongly inclined to believe that selfish and intractable patients are often very largely to blame when regrettable friction, not unseldom synonymous with petticoat government, exists in sanatoria—for the devil finds plenty of work for idle hands. It is only fair to say that due and tactful consideration on the part of patients for a hard-worked and zealous staff is always appreciated, and that a spirit of goodwill, conciliation, moderation, and forbearance nearly always bears goodly fruit in the end. With regard to the malicious intrigues, the petty spites, the sordid squabbles, and discreditable under-currents which are said occasionally to mar the efficiency and to sully the good name of sanatoria, "least said, soonest mended." An exhaustive discussion of, and inquiry into, these matters — though doubtless interesting to the student of psycho-physiology—would serve no useful purpose. On the other hand, it is futile to cry peace when there is no peace, and if, as has been suggested, big "draughts of happiness" in early pulmonary trouble would be likely to increase bodily resisting-power, and to re-establish the machinery of immunity, one may well ask whether tomb-like solitude—a silence which, like deep darkness, can be felt, broken only by the premature matutinal song of birds—an autocratic doctor, with a manner oscillating between abruptness and arrogance, self-important and self-assertive nurses, and supercilious fellow-patients (for upon the disposition of its patients, not less than upon the character of its staff, a sanatorium depends), are likely to help the recovery of a certain class of neurotic or hyper-sensitive patients, already rendered irritable and depressed by the absorption of toxic matter. It is hard enough for some to have to endure the knowledge and discomfort of severe disease, long, lonely, silent periods in bed, with acute pyrexia (accompanied, it may be, by severe constitutional disturbances); severance, perhaps, for a protracted period from relatives and friends; financial anxiety, often

inseparable from the sudden and unexpected dislocation of one's former business or profession, without having to put up, in addition, with an atmosphere of calculated, frigid, and unsympathetic aloofness, lacking entirely in spontaneous kindness and generous camaraderie.

I frankly acknowledge that I have painted the picture in, perhaps, unnecessarily sombre colours. But we have to deal with pessimists as well as with optimists in sanatorium. The ideal sanatorium, be it remembered, is a place of hope and gladness, not of tears and sorrow; and although I have seen much joy and heard much happy laughter in sanatoria, and, generally speaking, have found sanatorium patients —all things considered—very happy, rather than the reverse, I have also seen many tears shed, especially by lady patients during the first weeks of treatment. If, as some doctors tell us, the influence of mind over matter is very great, and the mystery of vital energy cannot be mathematically expressed in symbols of X and Y, then indeed we are led to assume that a congenial environment may play a large part in healing the lungs. All the more reason, therefore, to consider the "personal equation," to recognize that in view of vast divergencies and diversities in temperament as well as in constitution, each individual case must be treated absolutely on its own merits. And this further means discrimination in the choice of a sanatorium. Remembering, then, that no two cases are alike, the less "red tape" in sanatoria, in the treatment of tuberculosis and in the advice of specialists, the better. For you cannot cure pulmonary consumption by rule of thumb. And in view of the fact that a preliminary educational course in sanatorium discipline, treatment, and routine is not only an essential and indispensable curative factor for all tuberculous patients, but also a prophylactic against spread of infection, sanatoria must attract, and not repulse, patients. Patients want to get well. They know that if *they* do not take the disease seriously, the disease will take *them* seriously. They are eminently malleable and plastic in the hands of doctors, sisters, and nurses whom they can respect and look up to. Let us clear our minds of cant and realize that it devolves upon the specialists of the kingdom to put their houses in order; to accept a certain measure of personal responsibility for the efficiency of the sanatoria to which they daily recommend patients, and for the well-being, comfort, and happiness of these patients. Sanatoria can, in the fight against tuberculosis, be likened to Lord Kitchener's block-houses in the South African War. If the fight is to succeed, they must be efficient, even as were the block-houses. Let specialists remember, too, that the flamboyant sanatorium is not always the best; that many good sanatoria hide their light under a bushel. Good doctors—men who will hold the scales fairly and faithfully, men who have the courage of their con-

victions, and no axes to grind—good nurses, good food and plenty of it (not "forced feeding," which is apparently valueless except in early cases with unimpaired digestion), good accommodation, good air, good drains—these and sympathetic words and kind hearts are the chief desiderata, added to ample bacteriological resources, and an enthusiastic recognition that vaccine-therapy, though still in its experimental stage, dare not be overlooked as possibly constituting the panacea of the future, even if with our present limited knowledge it only be the palliative of to-day. For, with increased comprehension of dosage, interment and method of administration, the adjustment of to-day may well become the specific of to-morrow. Happily we have many such sanatoria in our midst. Perhaps, if needs be, the State must further bestir itself; must intervene and see to it that the ideals and principles of the great pioneers of sanatorium treatment are adequately carried out in every instance; that some existing sanatoria are tuned up to a higher note of therapeutic efficiency, to the end that consumption may ultimately be stamped out, and to the undying honour and unfading glory of a great and noble profession.

THE ANTI-TUBERCULOSIS MOVEMENT IN WALES.

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For many years past Wales has suffered severely from consumption in all its forms, and particularly as regards phthisis—pulmonary tuberculosis—which has exacted a heavy toll in the Principality, and is the blackest spot in Great Britain from this disease. The statistics of the Registrar-General bear striking testimony to the ravages of this disease in Wales. The following table is taken from the Seventy-Second Annual Report of the Registrar-General for the year 1909. It will be seen that among the counties enumerated containing populations above 100,000 the highest uncorrected death-rates from tuberculosis in 1909 were 1,861 in Northumberland, 2,099 in Carnarvonshire, and 2,115 in Carmarthenshire.

TABLE INDICATING THE MORTALITY RATE FROM PHTHISIS IN THE COUNTIES OF WALES AS COMPARED WITH OTHER DISTRICTS.

Years 1905 to 1909.	Corrected Death-Rates per Million.		
	Persons.	Males.	Females.
England and Wales	1,125	1,325	938
England (excluding Monmouthshire)	1,120	1,333	920
Wales (including Monmouthshire)...	1,213	1,195	1,229
Cardiganshire*	2,237	2,320	2,159
Carmarthenshire*	1,525	1,409	1,633
Merionethshire*	1,512	1,567	1,462
Carnarvonshire*	1,501	1,588	1,420
Pembrokeshire*	1,393	1,383	1,401
Anglesey*	1,356	1,167	1,534
London...	1,325	1,729	946
Northumberland	1,308	1,417	1,206
Lancashire	1,294	1,567	1,038
Cornwall	1,245	1,594	918
Montgomeryshire*	1,217	1,316	1,125
Hampshire	1,184	1,454	931
Warwickshire	1,172	1,524	843
Flintshire*	1,151	1,284	1,026
Brecknockshire*	1,148	1,031	1,257
Suffolk	1,137	1,227	1,053
Glamorganshire*	1,134	1,122	1,145
Devonshire	1,128	1,275	990

* Indicates Welsh Counties.

Ten of the eighteen counties suffering the highest mortality from phthisis were thus Welsh, and no fewer than six of these had a higher mortality than any English county. The excess in these Welsh counties is shown in the table to affect female much more than male mortality. The table also shows that the mortality of males from phthisis is lower in Wales than in England, with the result that in Wales female exceeds male mortality, though in England and Wales, as a whole, the converse has held good for the last forty years.

The following table gives the death-rate from phthisis per 1,000 of the population in the counties of Wales and Monmouthshire in 1909, and it will be observed that Cardiganshire heads the list with a death-rate of 2·1 per 1,000, which also heads the list of all counties in Great Britain, and has a death-rate nearly double the average for England and Wales.

TABLE INDICATING DEATH-RATE FROM PHTHISIS PER 1,000 PERSONS LIVING IN THE COUNTIES OF WALES.

Locality.	Per Thousand Persons Living.	Locality.	Per Thousand Persons Living.
Cardiganshire	... 2·1	Glamorganshire	.. 1·1
Carnarvonshire	... 1·49	Flintshire	... 1·09
Carmarthenshire	... 1·42	Montgomeryshire	... 1·02
Brecknockshire	... 1·23	Radnorshire	... 0·95
Pembrokeshire	... 1·23	Denbighshire	... 0·86
Merionethshire	... 1·22	Monmouthshire	... 0·85
Anglesey	... 1·17		

The Causal Factors.

The causes of this excessive mortality from consumption in Wales are largely due to the unsatisfactory conditions of housing and sanitation generally in the Principality, and the lack of any organized effort to cope with the disease. In this connection the Right Hon. John Burns, President of the Local Government Board, has pointed out, in a message to Wales, that the segregation of the advanced cases of consumption is not done in Wales to anything like the same extent as in England, "for whilst in England and Wales 19·3 per cent. of the total deaths occur in public institutions such as infirmaries and hospitals, in South Wales only 8·4 per cent., and in North Wales only 6·5 per cent., occur in such institutions." Then, again, he remarks on the heavy infantile mortality in the Principality, for of the twelve counties in England and Wales having the highest infant mortality, six are in the Principality, according to the 1908 returns of the Registrar-General. It is obvious that the stamping out of consumption is retarded indefinitely when a healthy childhood fails to be secured.

The closeness between the problem of reduction of infant mortality and that of consumption is seen further in the causes producing the two. "Unsatisfactory condition of housing," says Mr. Burns, "especially as to cleanliness, are an essential element in the production of this excessive mortality. I am aware that in many parts of the Rhondda district and elsewhere good modern houses are springing up. My inspectors' reports show that in many parts of Wales overcrowding prevails, and the dwellings are the reverse of satisfactory, and the facts justify the statement made in a recent report issued by the Board, that some of the densely populated parts of Glamorgan, and I may add in some other counties of Wales, are in a profoundly lower condition as regards elementary sanitation than other parts of England."

The housing evils prevalent in the congested mining districts of South Wales, and the scarcity also of suitable houses, form an

essential part of the problem. In Merthyr, for instance, the housing conditions have been repeatedly adversely commented on in reports to the Local Government Board, great overcrowding existing, and lack of suitable dwellings. At present, however, strenuous efforts are being made by the Corporation to correct this state of affairs.

In many of the rural districts of Wales the sanitary condition is very bad. Judging from the Medical Officer of Health's reports of the rural districts of Cardiganshire, where the phthisis death-rate is highest, the sanitary condition is far from satisfactory. In only a few districts was supervision exercised over the erection of new houses, which were damp and ill-ventilated and had insanitary surroundings.

In many of the most beautiful rural counties of Wales the houses are very badly constructed. In the thatched cottages of Cardigan and Pembroke the windows are in many cases very small and never made to open, whilst the dwellings are damp, often overcrowded, and dilapidated and insanitary in the extreme. It is also noteworthy that in many of these cases great apathy and indifference exists, and it is impossible to get the rural population to improve their surroundings and live according to hygienic principles. Urgent provision is required for the proper isolation of advanced cases which at present generally die in their homes, after infecting numbers of their family, and proper application of the Public Health Acts, particularly in connection with the milk supply and housing in the rural areas, is required. Judging from the reports of the Medical Officers of Health, it is almost impossible at present to obtain proper isolation of infectious disease at homes such as these, and in the case of phthisis things are in an even worse state.

It is worthy of note that among the Welsh counties the western ones seem to suffer most severely from tuberculosis. In the case of Cardiganshire there is reason to believe that lack of animal food and a sufficient dietary, together with bad housing conditions, lay the foundation for the disease. The masses of people are said to live largely on tea and bread and butter; there is very little meat and milk consumed in the rural areas, as, owing to the thrifty habits of the people, it is sold whenever possible. There is also marked humidity in this county—bordering as it does the Atlantic—and this possibly plays some part; whilst it is said to be customary for persons born in, or belonging to, the county, who have contracted consumption elsewhere, invariably to return home to die among their own people. Finally, there may be some grounds for doubting the accuracy of death certification in some of the rural areas, as the Registrar-General has repeatedly commented on the difficulty of securing accurate mortality returns in Wales. Formerly "registers

were in a state of hopeless confusion," and even at the present day there is a great tendency to put down deaths from obscure causes or wasting as due to "decline," which swells the mortality returns.

Conditions Predisposing to Tuberculosis.

The exhibits of the Welsh National Memorial show some terrible examples of insanitary dwellings in the rural areas of Carnarvon, Merioneth, and other parts of Wales. Dilapidated courts, with houses built back to earth, with marked overcrowding and no through ventilation, are shown, and this condition of affairs is a common feature of the case. According to the Welsh Housing Association, the population of Wales has doubled in the past thirty years, and there is a shortage in houses of 7 per cent., which left 82,000 of the new population worse housed than was the case thirty years ago. In Glamorganshire there were 7,600 two-roomed tenements, of which 1,100 were each occupied by four persons. It is worthy of note, however, that the incidence of phthisis upon coal-miners alone is less than that of the population as a whole—the death-rate among Rhondda miners in 1909 being 0·58 per 1,000 as compared with 0·81 of the whole population. It would appear from these figures that the occupation of coal-miners is to some extent antagonistic to the contraction of, and a fatal issue from, this disease. (Report of Medical Officer of Health for the Rhondda, 1909.)

Another factor in Wales tending to hamper measures directed against consumption is the fatalistic view, so common in the rural areas, that consumption once contracted is incurable, and that if the parents die of this disease, the children are similarly doomed. "The child is in a decline," and nothing whatever is done; "it is bound to die sooner or later." This one hears only too often, and no effort whatever is made to place the patient under better conditions, or prevent it infecting other inmates of the house and home. It is remarkable how strong is this belief, and the educational campaign now carried on by the Welsh National Memorial will have achieved a national service if it succeeds in convincing the Welsh people that consumption is not hereditary, and that it is curable if properly dealt with in the early stages.

Existing Institutions for the Treatment of Consumption in Wales.

The only public sanatoria in Wales at present for the treatment of consumption are the following: (1) The West Wales Sanatorium, Alltymynydd, Llanybyther, Carmarthenshire; and (2) The Sanatorium at Menai Bridge, Anglesey.

The West Wales Sanatorium at Alltymynydd, Llanybyther, was

opened on July 20, 1908, by H.R.H. Princess Christian. It was established by and for the three counties of Carmarthen, Cardigan, and Pembroke, through the efforts of the people of those counties, particularly Sir James and the late Lady Drummond, the late Earl Cawdor, Dr. Reid, Colonel H. Davies-Evans, and Mr. P. J. Wheldon. It is centrally situated for the three counties at an elevation of 850 feet above ordnance datum on the southern slopes of Alltymynydd, and is distant six miles from Lampeter and three from Llanybyther. The site has a south-west aspect, and is sheltered from the north and east winds by the mountain slopes. The woods afford possibilities for the provision of suitable walks for the patients. The design of the institution is that of a central two-storied building comprising an administrative portion in the centre, and in each wing accommodation for about ten patients of the poorer classes. The present number of beds is given as twenty-six.

The only other existing public sanatorium is that which was established at Menai Bridge by Miss Davies of Treborth, Bangor. The number of beds is eight, and the patients are received at a nominal charge from Anglesey and neighbouring counties of North Wales *only*.

For purposes of reference the following table may be of practical service :

SANATORIA IN WALES.

Name and Location.	Number of Beds.	Information to be obtained from	Terms of Admission.	Name of Resident Medical Officer.
Nordrach, in Wales ...	23	The Secretary, Pendyffryn Hall, Penmaenmawr	£4 4s. to £6 6s. per week inclusive	Ronald Campbell MacFie, M.A.,M.B.,C.M. George Magill Dobson, M.B., B.Ch.
Vale of Clwyd Sanatorium, Llanbedr Hall, Ruthin, North Wales ...	21	The Resident Physician	£4 4s., £4 14s. 6d., to £5 5s., inclusive, according to room	George A. Grace Calvert, M.B.
Penhesgyn y Gors, Menai Bridge, Anglesey	8	Miss Davies, Treborth, Bangor, North Wales	Minimum charge of 5s. per week for women only. Patients from Anglesey and neighbouring counties alone accepted	No Resident Medical Officer. Dr. Grey Edwards, Bangor, is in charge of the patients.
Springfield, Newport, Mon.	30	Clerk, Guardians, Newport, Mon.	Only pauper cases admitted	E. B. Hughes, M.R.C.S.
West Wales Sanatorium, Alltymynydd, Carmarthenshire	26	E. C. Harris, Bryn Towy, Carmarthen	Limited to inhabitants of Pembroke, Carmarthen, and Cardigan	Basil Adams, M.B., B.Ch.

The private sanatoria in Wales, for the treatment of paying patients, are two in number : (1) Nordrach, in Wales ; Penmaenmawr, North Wales ; and (2) the Vale of Clwyd Sanatorium, near Ruthin, North Wales.

Municipal Action and the Arrest of Tuberculosis.

In the large towns of South Wales a start has been made towards the administrative control of consumption.

In the City of Cardiff, where the mortality from phthisis in 1909 was equal to an annual death-rate of 1·19 per 1,000, at the advice of Dr. Walford, the Medical Officer of Health, voluntary notification of phthisis has been adopted since 1901, and notified cases have been visited by Women Health Visitors. Spit-bottles are provided, and the patient educated to avoid infection of other inmates of the house. Free examination of sputum of suspected cases is also made in the Public Health Laboratory.

The Cardiff Health Committee, at the initiative of its chairman, Dr. James Robinson, instituted a Tuberculosis Dispensary at the City Hall on October 1, 1910. The Assistant Medical Officer of Health was appointed to attend, assisted by a trained Woman Health Visitor, who is also a fully-trained nurse and qualified to dispense. Although the dispensary has only been opened five months, its success is assured, for already over 600 patients have attended, of which at least 400 are definite cases of phthisis. Bacteriological examination of the sputum is also carried on as an aid to diagnosis, and systematic home visiting is done by the Health Visitor. The need for such an institution will be realized when it is stated that patients have attended from all parts of South Wales, although the dispensary is primarily intended for Cardiff patients. The work is rapidly increasing, and urgently calls for the services of a whole-time medical officer, who would thus be able to undertake home visiting for the examination and control of contact cases on the lines of the Edinburgh Dispensary system. Proposals are also afoot for the erection of a sanatorium in the district of Cardiff, and a conference of neighbouring sanitary authorities has been called by Dr. J. Robinson, to whose zeal and enthusiasm the movement in Cardiff is largely due.

There is also great need in Cardiff for proper hospital accommodation for advanced cases where proper isolation may be carried out. At present no provision whatsoever exists for the systematic sanatorium treatment of early cases of phthisis and the isolation of advanced ones apart from the Union Hospital.

In Cardiff, also, the Union Hospital have provided huts for the open-air treatment of consumption at the country branch at Ely, and

the Guardians have also sent away at their own expense a number of consumptives to existing sanatoria in England.

In Swansea the Corporation are contemplating the erection of a number of châlets upon their own property in the suburbs of the town, and there is every likelihood that the scheme will be shortly proceeded with.

At Newport, voluntary notification of phthisis is in force, and a number of beds at the Corporation Fever Hospital are utilized for the open-air treatment of consumption under the supervision of the Medical Officer of Health. The Poor Law Authority also have provided for the treatment of pauper cases at the Springfield Sanatorium attached to the Union Hospital.

A National Movement against Tuberculosis.

The Welsh National Memorial to the late King Edward VII., having as its object the eradication of consumption in Wales, was first mooted by Mr. David Davies, M.P., of Llandinam, Montgomeryshire, in September, 1910. The scheme was at once enthusiastically supported throughout Wales, and particular mention may be made of Alderman John Chappell, then Lord Mayor of Cardiff, who convened a representative conference of representatives of North and South Wales at Shrewsbury on October 1, 1910, when the scheme was formally launched. Subscriptions were then announced by the Treasurer (Mr. David Davies) amounting to £133,000, and since then the fund has gradually grown until at present it amounts to nearly £180,000. The amount it is hoped to raise amounts to £300,000, and the scheme is said to follow three main lines :

1. An educational campaign throughout Wales, to educate the people to the prevention and curability of consumption. This has already been commenced, and the Welsh Tuberculosis Exhibition commenced a tour of visits through Wales in January last, and has already visited Newtown (the headquarters of the movement), Rhayader, Builth, Merthyr, and is at present at Pontypridd. It will shortly visit Cardiff and later North Wales, Aberystwyth, etc. Full exhibits are shown of the causes, prevention, and treatment of consumption, and lectures are given by approved lecturers on the different aspects of the disease. The exhibits comprise designs and photos of sanatoria, with models of sanitary dwelling-houses, also of typical consumption houses. Photographs are also shown of poor housing conditions in different parts of Wales, many of which are little better than hovels. The Irish Women's National Health Association also have a travelling exhibit, and the indefatigable secretary of the Welsh National Memorial Fund, Professor Thomas Jones, and Dr. Hopkins, also accompany the exhibition and give

lectures. Miss Lloyd, a trained cookery teacher, gives demonstrations in cookery. Literature concerning the causes, prevention, and treatment of phthisis is distributed in English and Welsh. The hon. treasurer is Mr. David Davies, M.P., Llandinam, Montgomeryshire, whose name is already a household word in the Principality, as the author of this scheme, which will, if carried out in its entirety, bestow untold blessings in the alleviation of suffering and distress from this disease.

2. The second object of the National Memorial is the formation of local tuberculosis dispensaries, where free advice may be obtained and incipient cases sought out and controlled.

3. The erection of sanatoria throughout Wales for the treatment of the disease, in which the existing West Wales Sanatorium will form an integral part of the scheme. So far no definite plan has been submitted, as it depends on the response to the appeal of the fund to the nation. I am informed by the organizers that remarkable and widespread interest has been aroused by the tour of the exhibition throughout the Principality, and it is fervently to be hoped that the object of this grand movement will ultimately be obtained, and that the words of its motto be happily fulfilled: "I helpu'r hen wlad yn ei blaen," which, translated into English, reads "To help the old land forwards."

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION AND THE CRUSADE AGAINST TUBERCULOSIS.

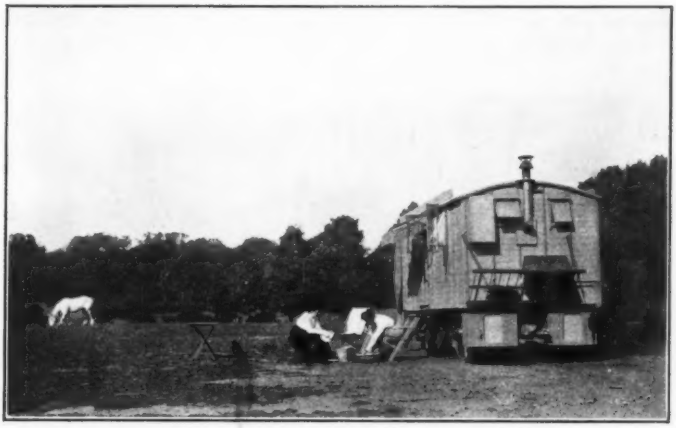
By R. MURRAY LESLIE,

M.A., B.SC., M.D., M.R.C.P.,

Chairman of the Women's Imperial Health Association; Senior Physician, Prince of Wales Hospital; Physician to the Royal Hospital for Diseases of the Chest, London.

The Women's Imperial Health Association has put the crusade against tuberculosis in the forefront of its energetic health campaign which is being conducted in London and throughout the provinces. Numerous lectures have been and are being delivered in the Metropolis on "The Prevention of Consumption," illustrated not only by a splendid series of suitable lantern-slides, but by special cinematograph demonstrations. These have proved an extraordinary attraction

to numbers of people, who otherwise could not have been induced to attend. Similar lectures and demonstrations have been given in numerous provincial towns and villages by medical men and women to audiences varying in number from twenty-five to no less than one thousand people. At the close of all these lectures attractively designed leaflets, pointing out in clear language the value of fresh air, the importance of the open window, and the dangers which come from promiscuous expectoration, are distributed gratis to each individual in the audience. Many of these gatherings consist almost entirely of



OPEN-AIR LIFE WITH THE "FLORENCE NIGHTINGALE" CARAVAN.

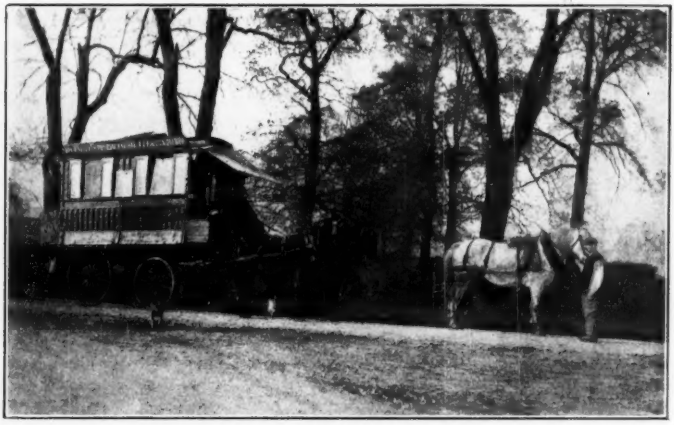
women and young girls, who, in the home and in their influence on child-life, have the power of giving practical effect to the lecturer's suggestions.

Less formal lectures on similar lines have been given at Mothers' Meetings, Factory Girls' Clubs, Girls' Friendly Societies, and even at Physical Recreation Colleges, and in all cases they have been listened to with the greatest interest; while the appropriate Health Leaflets have been carefully read, and in many cases thoroughly digested, as is proved by the practical results which have been attained.

The campaign against consumption in the provinces, which has been by far the most striking and original piece of work undertaken by this Association during the past year, has been conducted by means of specially-arranged *Caravan Tours*. The inspiration may be partly traced to the late Miss Nightingale's paper on "Rural Hygiene: Health Teaching in Towns and Villages," published by her in 1893. Two splendidly-equipped caravans were purchased, and, after being

fitted up with all modern requirements, including magic lantern and cinematograph apparatus of the latest type, were staffed by experienced health lecturers and biograph operators, and despatched, one from London to the West of England, and the other to East Anglia. The "Aurora" Caravan Tour journeyed from Maidenhead to Cirencester, via Bristol, passing through Middlesex, Berkshire, Buckinghamshire, Gloucestershire, Wiltshire, and part of Somersetshire; while the "Florence Nightingale" Caravan Tour journeyed from Romford to Norwich, passing through Essex, Suffolk, and Norfolk.

At all the lectures and health talks given in the various towns and villages by medical men and women and specially appointed



THE "AURORA" CARAVAN ON TOUR.

health lecturers particular emphasis was laid on the value of fresh air, the importance of the open window, and the prevention of consumption, while the outside of the caravans was adorned with placards drawing attention to the importance of these questions. A warm welcome was extended to the caravan in each village on its arrival by the inhabitants, many of whom had heard of the work of the Association through the local press and through the medium of advance representatives, who were able in many cases to "bill" the villages beforehand. The local Mayor, Medical Officer of Health, or other prominent official, generally occupied the chair in the larger towns and hamlets.

Many thousands of leaflets dealing with the prevention of con-

sumption have been distributed by the Caravan Tours. The following two may be quoted :

> "Shutting the Windows brings Bad Luck. Sickness is the Worst Kind of Bad Luck. Open the Windows."
>
> "Danger ! The Practice of Spitting in Houses and Streets spreads Consumption by scattering the Germs of the Disease. Please Don't Spit."

The Caravan Tours were so novel, and at the same time so successful, that they received great publicity through the medium of the London and Provincial Press. The *Times* of October 8, 1910, publishes the following recognition of the work of the Association in the provinces: "It is a tribute to the practical and attractive type of the literature published by the Women's Imperial Health Association that the handbills and pamphlets are never found littering the streets and lanes. Another tribute to the good work already done is the fact that the rule of the Open Window is more generally observed. On arrival at a new village those in charge of the Health Caravan have carefully noted the number of closed windows, and a second census taken on the eve of departure has shown a very marked improvement."

It is proposed to recommence the Caravan Tours in the provinces in May, when it is hoped to enlist the aid of many voluntary workers. The Association is already making preliminary arrangements for another vigorous anti-tuberculosis campaign during the forthcoming summer and autumn.

CRITICAL REVIEWS.

CLINICAL STUDIES IN TUBERCULOSIS.

By J. E. BULLOCK,
M.D., M.R.C.S.

The Cerebro-Spinal Fluid in Tuberculous Meningitis.

A SYSTEMATIC effort has been made by Dr. Josephine Hemenway,[1] in the laboratory of the Babies' Hospital in New York, to determine the presence of tubercle bacilli in the cerebro-spinal fluid in cases of tuberculous meningitis. 138 cases had been admitted since March, 1906, and fluids for examination were obtained 137 times. In all but two the tubercle bacilli were demonstrated in the cerebro-spinal fluid. She has but little doubt that bacilli are more numerous late in the disease, yet she found in the first puncture 117 cases; in the second, 13; and in the third, 4. On an average, the first puncture was made about ten days before death.

As most hospital cases are not admitted until symptoms are tolerably well marked, it is somewhat difficult to say how early in the disease the bacilli might regularly be found. Griffith[2] has found, in looking over the records of the Children's Hospital of Philadelphia, that during the last ten years there had been admitted 239 cases of meningitis, of which number 121 were tuberculous. Although the diagnoses were necessarily primarily clinical, part of them had been confirmed by lumbar puncture, and in many cases by autopsy also. He thinks that tubercle bacilli can be discovered in the cerebro-spinal fluid in the great majority of cases, although long and minute search may be required. In addition to a bacterial investigation, he advises a careful cytoscopic study; but there are exceptions to the common belief that tuberculous meningitis produces an increased number of lymphocytes in the cerebro-spinal fluid. Morse[3] lays great stress on the discovery of tubercle bacilli, as he has obtained a positive tuberculin test in cases of infantile paralysis, "in which also the characteristics of the cerebro-spinal fluid were exactly those of tuberculous meningitis, except that tubercle bacilli were not present." Holt[4] feels "sure that the great frequency of tuberculous meningitis is not appreciated. With the introduction of lumbar puncture, the

[1] Hemenway: *Archives of Pediatrics*, January, 1911.
[2] Griffith: *Archives of Pediatrics*, January, 1911.
[3] Morse: *Ibid.*
[4] Holt: *Archives of Pediatrics*, January, 1911.

diagnosis of acute meningitis enters upon a new phase. This is quite as important an advance in this group of diseases as is the adoption of throat cultures in diphtheria and other throat affections." He found that tuberculous meningitis occurred in 70 per cent. of the cases of acute meningitis in the Babies' Hospital, apart from the epidemic of cerebro-spinal meningitis. During the past four years, 8 per cent. of the hospital deaths had been due to this cause. In general practice tuberculous meningitis was very often overlooked or a mistaken diagnosis made: of thirty successive cases admitted to the hospital, in only three was the diagnosis made, and in only three others was it suspected. He states that two common misconceptions regarding tuberculous meningitis are, that it is a disease of long duration, whereas it rarely lasts over five weeks; and, secondly, that it usually affects delicate infants. He does not mean by this that healthy children are more prone to the disease, but that a tuberculous infection in a young child is very apt to involve the brain early, before there is time for the symptoms which result from general tuberculosis to be manifest. He thinks that in tuberculous meningitis bacilli are always present in the cerebro-spinal fluid, and although difficult to find in the early stages, a careful examination should disclose them in the later stages. An interesting case, illustrating the importance of the detection of tubercle bacilli in the cerebro-spinal fluid, is reported by Higgs.[1] Tubercle bacilli in the fluid obtained by lumbar puncture confirmed the diagnosis of tuberculous meningitis, yet the fluid showed chiefly polymorphonuclear cells, with only a few lymphocytes. The case was also remarkable, in that at the autopsy no tubercles were found at the base of the brain or in the lungs, or in other organs, but tubercle bacilli were found in the cortex of the brain.

As to the age-incidence of tuberculous meningitis, Griffith[2] believes that most cases of tuberculous meningitis occur during the first two years of life, although but few occur before the age of six months. The disease is clinically meningitis only, the most frequent exceptions being, first, in older children suffering from tuberculous disease of the bone, in which meningitis finally develops and causes a fatal ending; and, second, in very early childhood, when, in general tuberculosis, meningitis is only one of the clinical manifestations.

[1] Higgs: *British Medical Journal*, May 15, 1909.
[2] Griffith: *Archives of Pediatrics*, January, 1911.

THE OPSONIC INDEX IN TUBERCULOSIS.

By W. H. BRAZIL,

M.D. LOND., D.P.H. CAMB., B.SC. MANCH.

In 1903 Wright and Douglas[1] demonstrated the existence in serum of certain bodies which have the power of so acting on bacteria as to render them more readily ingested by phagocytic cells. This was independently confirmed in the following year by Neufeld and Rimpau,[2] who described a bacteriotropic substance in immune sera apparently identical with the bodies discovered by Wright, and to which he gave the name of *opsonins*. These bodies have been compared to the various sauces used to stimulate appetite for different dishes, and the derivation of the word—*ὄψον—seasoning, sauce*—seems to correspond with that view. The matter is not, however, so simple as this comparison would suggest. It has been shown that opsonins possess a double structure, one of the constituents—a complement-like body—being destroyed by heat; the other—an amboceptor-like body—being thermostabile.[3] It is important to note that opsonins act on the bacteria themselves, and that this is entirely independent of any action on the phagocytes. The bacteria are not injuriously affected by the action of opsonins, but may retain their vitality and virulence unimpaired.[4]

As to the specific character of opsonins towards different bacteria, the results of investigators are somewhat conflicting. It appears to be definitely established, however, that while normal serum contains opsonins which are of general availability against bacteria of all kinds, there exist in immune sera opsonins which are specific to particular organisms.[5] The quantitative estimation of these bodies is effected by a method devised by Wright, and termed by him the *opsonic index*.

Regarding the accuracy of this method as affording an index of the true opsonic content of the blood, much difference of opinion exists; some observers having obtained results so discrepant as to render them obviously unreliable, while in other hands figures have been obtained not only consistent in themselves, but in general conformity with clinical indications. The explanation of this discrepancy of results probably lies in the extreme delicacy of the technique and the numerous pitfalls of error which have to be avoided in carrying it out; and the method, though not attaining mathematical accuracy, appears to be

[1] Wright and Douglas: Proceedings of the Royal Society, vol. lxxii., September, 1903.
[2] Neufeld and Rimpau: *Deutsche Med. Wochenschrift*, 1904.
[3] Allen, R. W.: "Vaccine-Therapy." Third Edition. London: H. K. Lewis. 1910.
[4] Emery: "Immunity and Specific Therapy." London. 1909.
[5] *Ibid.*, p. 271; Allen: *op. cit.*, p. 7.

reliable enough in reliable hands.[1] As the criticism directed against it has been chiefly in its application to tuberculosis, it may here be noted that the above remarks apply especially to the tuberculo-opsonic index.

The further question of its utility as a clinical guide in tuberculosis may now be discussed.

The Opsonic Index in the Diagnosis of Tuberculosis.

The indications which opsonic estimation affords in diagnosis depend not only upon the low index obtained in many cases, but also upon the fact that in infection the oscillations of negative and positive phase produced by inoculation are much more pronounced than in health; and this applies both to auto-inoculation and to vaccine injection. Thus, if after auto-inoculation by passive movement of a doubtful hip-joint the index to the tubercle bacillus shows a considerable fall, followed by a pronounced rise, as in a case quoted by Allen,[2] we may conclude that we are dealing with a tubercular infection. Instances of its utility might easily be multiplied, but the following will suffice: A symmetrical hydrops of the knee-joints in a child was considered on clinical grounds to be syphilitic, but the application of an Esmarch's bandage so disturbed the opsonic index that the diagnosis of tubercle was unhesitatingly made, and was upheld by the subsequent course of the case.[3]

In cases of multiple infection, where we cannot tell which of several bacteria is the cause of the symptoms, the value of the opsonic index may be very marked. For example, in a case of middle-ear suppuration with enlarged cervical glands, it was impossible to determine whether the lesion was due to tubercle or to a pyogenic micro-organism. The opsonic index to the tubercle bacillus was found to be 0·56, that to the suspected staphylococcus 1·0. From this it was inferred that the case was one of tubercular infection, and injections of tuberculin were commenced. A pronounced rise of the index followed, and this was accompanied by marked improvement in the symptoms, so that after two months' treatment the discharge from the ear had completely ceased.[4]

The Opsonic Index as a Guide in Vaccine Therapeutics.

Here the opsonic index is of distinct value, especially in relation to the interval between repeated doses, for it has been shown that too frequent dosage leads to cumulation of negative phase, while cumulation of positive phase cannot be produced in tuberculosis.[5] Proper spacing

[1] Fleming: *Practitioner*, May, 1908.
[2] *Loc. cit.*, p. 72.
[3] Collier, H. Stansfield: *Practitioner, loc. cit.*
[4] Tod, Hunter F., and Western: *Ibid.*
[5] Allen: *loc. cit.*, p. 70.

of doses is therefore a matter of great importance. The guidance furnished by the opsonic index is entirely in accord with clinical evidence. Thus it has been shown that in phthisis the temperature bears an inverse ratio to the opsonic index,[1] and that the associated pulse-rate follows the same rule.[2] It has also been demonstrated that an inoculation which has a beneficial effect is accompanied by a rise in the opsonic index, whereas an overdose of tuberculin causes fever, headache, malaise, and loss of appetite, and that these symptoms are accompanied by a fall in the opsonic index.

Similar results have been noted in auto-inoculation as carried out at Frimley by Dr. Paterson's system of graduated labour.[3] These observations while indicating the general reliability of the method, at the same time demonstrate that, though useful, it is not indispensable as a therapeutic guide.

The Opsonic Index in the Prognosis of Tuberculosis.

After a period of inoculation or sanatorium treatment, it is often extremely difficult to determine when the patient may be considered immune. Here the opsonic index furnishes information available from no other quarter, for it is only while infection persists that marked oscillations of the index occur, whereas when immunity is attained it becomes normal and remains steady.

The fact that in general tuberculosis and other acute infections death may be preceded by an abnormally high index has proved a stumbling-block to many in the acceptance of the opsonic theory. But there is really no difficulty here at all. The high opsonic index in these cases simply represents a final effort of one of the protective mechanisms, which is ineffective owing to the overpowering of vital centres by toxins already formed. What is here wanted is an antitoxin to come to the aid of another protective mechanism, which has broken down owing to the acuteness and severity of the attack.

Wright points out also that it is useless to have an abundance of opsonins in the blood if these, from any cause, fail to reach the focus of disease—a condition which has been shown to exist in certain cases.

[1] Emery: *loc. cit.*, p. 269.
[2] Allen: *loc. cit.*, p. 216.
[3] Inman: *Practitioner, loc. cit.*

PERSONAL OPINIONS.

TUBERCULIN IN DISPENSARY PRACTICE.

By Miss HILDA CLARK,
M.B., B.S.,
Hon. Physician to the Street Tuberculin Dispensary.

The Street Tuberculin Dispensary was started in August, 1910, and there are now over ninety names on the books, of whom fifteen are discharged in good health. Patients applying for treatment are required to obtain leave from their own doctors, to whom they are always referred if complications of non-tubercular character occur. All cases in which the diagnosis is not absolutely certain are subjected to the subcutaneous tuberculin test, and no case is pronounced negative unless there is no reaction to a second dose of 0·01 c.c. This has occurred in fifteen patients showing slight degrees of ill-health and in whom the physical signs are indefinite.

Those who cannot attend the dispensary are visited in their own homes. The dispensary hours are arranged so that no one need lose time from work or school. Two beds are maintained at the county sanatorium, and the dispensary patients continue the tuberculin there without interruption. Several patients sleep in shelters in their own gardens, and in a few cases antiseptic inhalation is ordered. An attempt is made to secure charitable assistance for deserving cases. All patients are visited by a fully-trained nurse, who gives necessary instruction.

It is too soon to draw any conclusions as to permanency of cure, but the following facts seem established: (1) Tuberculin administered by this method is free from undue risk. I have had no case, out of over 100 treated, in which there is any evidence of harm. Only two cases have become worse, both being very advanced, with hopeless prognosis. One of these made astonishing progress for many months. Two other advanced cases are showing no improvement. (2) A marked degree of improvement is attained in nearly all cases, sufficient to justify a prolonged experiment. (3) A high degree of immunity to old tuberculin is obtained by a course of the less toxic bovine tuberculin. (4) Early cases can usually be treated satisfactorily while at work. (5) This method is applicable to large numbers of patients, especially women, while the disease is still in an early stage, to whom any other effective treatment is an impossibility.

The chief value of the system lies in the diagnosis and treatment of early cases, and though some of these would cure themselves unaided, it is impossible to predict in which cases this may occur. It is also impossible to foretell how a case will react to tuberculin. Some improve at once; others seem worse at first and then improve. It is therefore best to start the treatment of an early case at the dispensary, and if good response to tuberculin is not obtained, sanatorium or other subsidiary treatment can be recommended, after due consideration of the home conditions. Cases of mixed infection nearly always require other treatment before tuberculin can be used. Many cases of advanced chronic tuberculosis with little secondary infection do surprisingly well with tuberculin alone, and are excellent testimonials to the real value of the remedy.

TUBERCULIN DISPENSARIES.

By A. MEARNS FRASER,
M.D., D.P.H.,
Medical Officer of Health for Portsmouth.

The employment of tuberculin has been looked upon with little favour in this country, where medical opinion seems never to have recovered from the disastrous results which followed its indiscriminate use after its introduction by Koch in 1891-92. Here it has been regarded as a dangerous therapeutic remedy, only very cautiously employed in certain sanatoria, and here and there by the general practitioner and the specialist. In Germany, on the other hand, many scientific workers have been steadily and systematically studying the dosage and therapeutic effects of the various tuberculins, with the result that its use in that country has increased of late years by leaps and bounds. Not only is it employed at sanatoria and hospitals, but it is also used largely in out-patient practice. As regards the alleged dangers attaching to its use, two well-known authorities write: "The contention that the dosage of tuberculin preparations cannot be so accurately determined as to avoid harm to the patient has been refuted by clinical experience of such abundance that its reiteration is tedious."[1]

Although, however, most English practitioners have fought shy of tuberculin, there is one, Dr. Camac Wilkinson, who has persisted in his belief in its value as the one specific remedy in tubercu-

[1] Bandelier and Roepke: "Tuberculin in Diagnosis and Treatment," English translation by Dr. Egbert Morland, of Arosa.

losis, and it is owing mainly to the results he has published, and to the success he has obtained at a small dispensary in South-East London, that there seems every probability of tuberculin now being given a thorough trial in this country. It is hoped that in the tuberculin dispensary a successful means has been found of treating persons in the early stages of consumption, and this without obliging them to give up their means of livelihood for several months, which condition must always prove a fatal obstacle to the solution of the consumption problem by means of sanatoria. At Dr. Wilkinson's dispensary there are a number of patients being treated who at the same time are doing their ordinary daily work, the only interruption to it being the necessary time taken for attendance at the dispensary twice a week. At Street, Somerset, Dr. Hilda Clark has also established a tuberculin dispensary, at which over seventy patients have been treated during the past six months. Nearly the whole of these have also been working at the same time, the majority being employed in the boot-making trade, either in a factory or in their own homes. At Aldershot Colonel Treherne has been treating out-patients with tuberculin, who, too, are following their daily avocation. In both these latter places the method of tuberculin treatment is that advocated by Dr. Wilkinson. So uniformly successful have been the results in these institutions, that the Town Council at Portsmouth have decided to establish on the same lines a municipal tuberculin dispensary for the consumptive poor of that town.

Dr. Wilkinson's method of administration is to promote in the patient active immunization against the disease, which he seeks to accomplish by commencing with some of the less toxic tuberculins, and gradually working up to large doses of old tuberculin. Although, however, treatment by tuberculin is the specific feature of these institutions, it must not be thought that their usefulness is limited to dosing with tuberculin. A properly-equipped dispensary is also provided with trained nurses, who act as health visitors, in visiting the patients in their homes, and advising them with respect to the particular measures they should adopt to benefit their own health, and to prevent the spread of infection to others. One great advantage from health visitors is that by their aid other members of the family who appear to have become affected with phthisis can be induced to come to the dispensary, where the question of their being affected with tubercle can be definitely settled by means of the tuberculin test; and if found to be tubercular, they can then be given treatment, whilst still in the early and more easily curable stage. This latter point is perhaps one of the most important features in connection with tuberculin dispensaries, and one on which particular stress is laid by Dr. Wilkinson. Further, it is of great value to have a body of

voluntary workers attached to the dispensary, who are able, by providing good food and milk, to assist those patients who otherwise would be so ill-nourished as to be unable to derive the full benefit from the treatment; for as the tuberculin treatment depends on the formation of antibodies, it is essential that the vitality of the individual should be kept during treatment at as high a standard as possible. Voluntary assistance may also be of aid in providing temporary shelters, which may be erected in patients' gardens, and in providing funds for the maintenance of certain more advanced patients in a sanatorium, where the tuberculin and sanatorium treatment can be combined. In a word, a tuberculin dispensary will comprise all those measures which have been found of use in tuberculosis dispensaries, with the important addition that a specific means of cure will be provided; and, further, the fact that at tuberculin dispensaries the principal object held in view is the cure of the patient, and not, as in ordinary tuberculosis dispensaries, the prevention of the disease, is bound to exercise a very potent effect upon the numbers of the poor that will be attracted to the former in comparison with the latter.

INSTITUTIONS FOR THE TUBERCULOUS.

THE EDWARD SANATORIUM, NAPERVILLE, ILLINOIS.

FOR THE TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS.

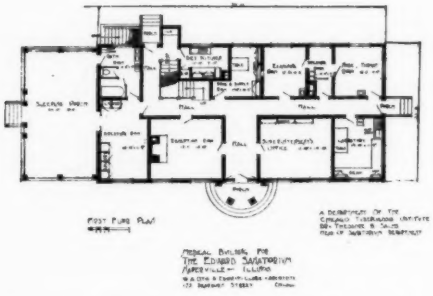
A DEPARTMENT OF THE CHICAGO TUBERCULOSIS INSTITUTE, CHICAGO, U.S.A.

THE Edward Sanatorium, Naperville, Illinois, is the first institution of its kind under Chicago auspices. It came into existence through the munificence of Mrs. Keith Spalding, of Chicago. The sanatorium was opened for the admission of patients on January 15, 1907, with a capacity of fifteen beds. The management was independent during

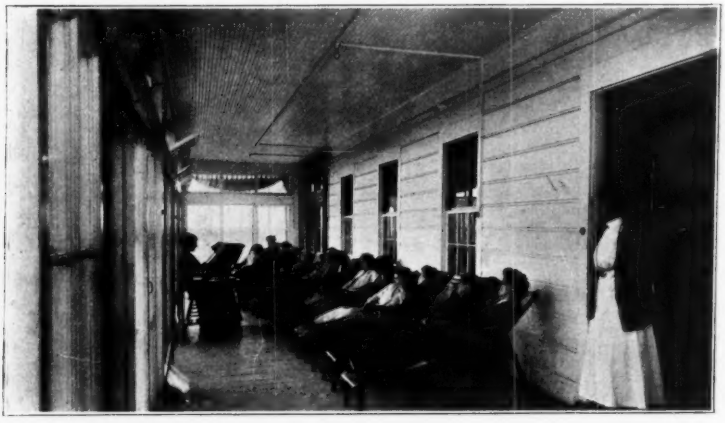
EDWARD SANATORIUM: MEDICAL BUILDING.

the first six months. In June, 1907, Mrs. Spalding transferred the institution to the Chicago Tuberculosis Institute. From the day of its opening until the present time the management and the development of the Edward Sanatorium has been directed by Dr. Theodore B. Sachs, Head of the Sanatorium Department of the Chicago Tuberculosis Institute.

The sanatorium is situated on a farm of 40 acres, just outside of the city limits of Naperville, thirty miles from Chicago. The present equipment consists of : (1) The old administration building, with its dining and assembly halls, kitchen, laundry, etc. ; (2) the new medical building, with infirmary, which contains all the necessary



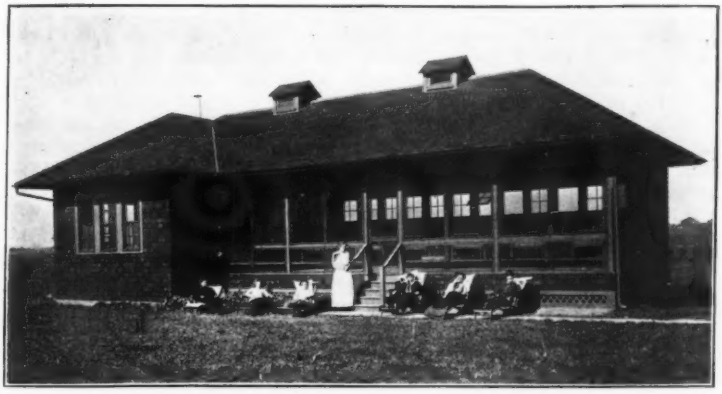
EDWARD SANATORIUM : MEDICAL BUILDING—PLAN OF FIRST FLOOR.



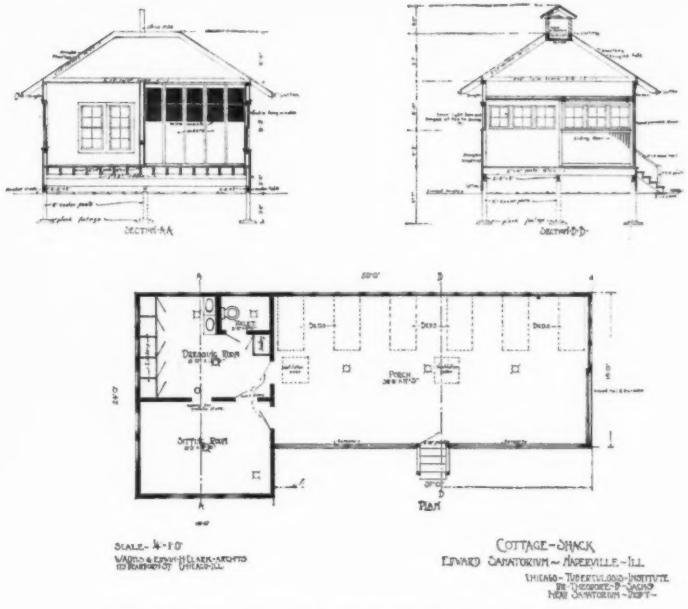
EDWARD SANATORIUM : PATIENTS' READING CIRCLE.

medical and laboratory facilities ; (3) five sleeping shacks and six Tucker tents ; (4) two recreation shacks ; (5) farmhouse and accessory buildings.

The present capacity is sixty beds, this number to be increased to seventy-five, with the erection of two additional sleeping shacks. The object of the Edward Sanatorium is to afford care to the tuberculous patient in moderate circumstances or without means. The



EDWARD SANATORIUM: SIX-PATIENT COTTAGE SLEEPING SHACK.



EDWARD SANATORIUM: PLAN OF COTTAGE SHACK.

majority of patients come from offices and manufacturing and commercial establishments of Chicago.

The policy of the institution is directed toward the gradual

development of an efficient sanatorium régime, with special attention given to a thorough medical and laboratory study of each individual case. The Edward Sanatorium being an institution for the wage-earner, graduated work, individually suited, is a part of the régime with the progress of convalescence.

Up to January 1, 1911, over 400 patients have been treated at the Edward Sanatorium. The average duration of stay was about four months. Two hundred and seventy-seven cases formerly treated at this institution have been analyzed in a report just issued by the Chicago Tuberculosis Institute. These cases were under observation for periods ranging from six months to three and a half years since their discharge from the institution.

Of 176 patients in the incipient stages of the disease, 161 are at present in possession of full working capacity; of ninety-one moderately advanced cases, 35·1 per cent. have full working power. The management of the Edward Sanatorium fully appreciates the fact that with the progress of time the ranks of the working ex-patients become reduced by the unavoidable or avoidable relapse of the disease. The significant fact stands out, however, very prominently, that arrest of the tuberculous process and restoration of working capacity go hand in hand in the treatment of incipient cases of tuberculosis.

The work of the Edward Sanatorium has drawn the attention of the Chicago community to the efficiency of sanatorium methods of dealing with tuberculosis. The results obtained at this institution led to the establishment of other private sanatoria, such as the Chicago-Winfield Sanatorium at Winfield, Illinois, under the auspices of the Associated Jewish Charities of Chicago and the Chicago Fresh Air Hospital. In a recent campaign for the Chicago Municipal Sanatorium, with its comprehensive provision for the tuberculous sufferer, the successful work of the Edward Sanatorium served as the main basis of appeal to the community.

An illustrated pamphlet and report of the institution can be obtained by writing to the Medical Director, Dr. Theodore B. Sachs, 100, State Street, Chicago, Illinois, U.S.A.

FRANK E. WING,
Acting Superintendent of the Chicago Tuberculosis Institute.

HEALTH STATIONS.

MONTREUX.

THE extraordinary popularity attained during the last ten or twelve years by Montreux, on the Lake of Geneva (Lac Leman), and its repute as an agreeable spot in which to spend a winter, has depended more on its pleasing situation, excellent hotel accommodation, and on the facilities afforded by electric and funicular railways to reach the neighbouring snow-levels of Glion, Caux, and Les Avants for the snow sports, than on its real merits as a winter health resort.

The days of its appreciation by pulmonary invalids are long passed. The blazing rays of Alpine sunshine have been effectual in attracting delicate persons, as well as the vigorous, higher up the mountains to the cloudless blue skies and dry air of Davos, Clavadel, Arosa, Montana, and Leysin, where *poitrinaires* are welcomed. There is, however, one particular feature which distinguishes the eastern extremity of Lac Leman from all other low-lying lake situations in Switzerland, with the exception of Locarno on Lago Maggiore—viz., the remarkable calmness of the atmosphere experienced during winter-time.

The district, comparatively limited in extent, to which these observations refer, includes not only Montreux proper, but the adjoining villages of Veytaux, Territet and Clarens. Building operations have proceeded so much apace that the agglomeration of hotels, villas, and other constructions make these subdivisions of the district indistinguishable to the eye of an ordinary spectator; consequently, the whole inhabited area currently passes under the embracing name of Montreux. Perfect shelter from the biting north and north-east wind is afforded by the southern spurs of the Jaman range—mountains of 3,000 to 5,000 feet—by the towering Rochers de Naye and by Mont Arvel.

The conspicuous Dent du Midi (10,450 feet) is due south, thirty miles distant. On the west lie some of the Savoy Alps, and almost the whole length of the lake is open to view, bounded by the Jura range fifty miles away. Over this stretch of water the most gorgeous sunsets appear; more especially if a higher point of vantage is taken such as Glion. So far, therefore, as shelter is concerned, Montreux leaves little to be desired. Beyond Clarens this acceptable protection from the so-called *bise*, or north-east wind, becomes less and less adequate, until we approach Vevey, where the bise attains at times considerable force. On these occasions Lausanne, Geneva, and other places along the lake are swept by a bitterly cold wind of intense violence. Fortunately, these northern gales from which Montreux is exempt are not of frequent occurrence, some winters being almost free from them.

The most common storms felt on the lake are those proceeding from a southerly direction, the so-called *föhn*—a hot dry wind in its first phase, which ripens the grapes in autumn and melts the snow in spring. In the winter months it is somewhat enervating, before ending with rain or a fall of snow. Heavy squalls may sometimes be expected from the west and south-west, but they are of short duration. The quarter from

which most of the light currents of air reach Montreux is north-west, on an average force of about 1 or 2 degrees Beaufort Scale. This is, of course, in striking contrast to the rude winds of the British Isles in winter.

In respect of temperature, owing to its sheltered position and to the proximity of a large body of water which absorbs heat during the summer and gives it off in winter, Montreux is for its latitude the mildest winter station in Switzerland. The vegetation and growth of the olive and palm witness to the absence of prolonged low temperatures; but with regard to the sensation of cold experienced in lake climates I shall refer again.

Montreux is 1,200 feet above sea-level. Its mean temperatures are: October, 50°; November, 42°; December, 36°; January, 33°; February, 37°; March, 42°; April, 49°. The relative humidity of any climate is usually expressed at so much per cent. of saturation. The basin of Lac Leman has a moderate degree of humidity. It is considerably drier than anywhere in the British Isles, but less so than in the mountains. The mean annual relative humidity for Montreux is 73 per cent., and there are on an average 122 days on which some rain falls (Torquay shows a mean of 84 per cent., with 187 rainy days).

The seasonal variations show the winter months to be the most humid. In the mountains, on the contrary, the winter months are the driest.

From the readings of the thermometer, it appears that there are about fifty days in the year when the temperature is below freezing-point. Wintry weather commences in the early part of the month of December, and lasts to the middle of February. During this time there may be some periods of mild weather with quite warm sunny days, but for the most part the lower temperatures, when the sun is obscured, convey a feeling of raw cold, especially if accompanied by any haze or mist rising from the lake. This is an invariable feature of lake climates in cold weather in any part of the world. The subjective sensations receive the impression of a much lower temperature near evaporating water, by a river, or at the seaside, than is registered by the thermometer. That depends on the rapid abstraction of heat from the body when cold air is humid. At high elevations where the air contains little moisture, low temperatures, even with deep snow covering the ground, are felt to be much less trying. Although the actual winter is somewhat cold, occasionally raw, and often overcast, the reputation of Montreux as a climatic station depends chiefly, first, on its complete shelter from wind; second, on the number of sunny days —about one third—which are experienced throughout a comparatively short winter. The month of November resembles our October without the wind and with less rain. In March and April it is one of the best climates in Europe, although there may be a brief return of wintry weather with a slight fall of snow. Spring may not be further advanced than in the South of England, but the sun will have greater power.

At one time, about thirty years ago, consumptives flocked eagerly to Montreux in winter, as a substitute for the sun and warmth of the Riviera, and before the matchless climates of the Grisons became famous for their cloudless skies and radiant winter sunshine; but it must be clearly understood now, that those persons suffering from tuberculosis are looked upon as infectious cases and are unwelcome.

Some hotels announce that they will in no case be received. To what patients, then, may Montreux be recommended? The answer to this question will depend on what season is selected for residence. The climate on the whole is somewhat sedative, especially in spring and autumn, and the winter, although calm, is much colder than places along the Riviera. To persons suffering from debility, anæmia, or from the effects of malarial fevers acquired in India or other hot climates, Montreux offers an agreeable resort from November to April. Chronic bronchitis, gout, rheumatism, in elderly people, do fairly well here. Many forms of heart disease are distinctly benefited if care is taken against undue exposure on very cold days. Persons suffering from Bright's disease should absent themselves in the months of December, January and February, as they will do better further south or in Ajaccio, Egypt, Algiers, etc. For delicate children of tubercular predisposition and who constantly get bronchial catarrh at home, and for Indian children, Montreux offers a beneficial change in climate, and there are facilities for education. For convalescents who have recovered from pneumonia, bronchitis, or pleurisy, and for neurasthenia and certain diseases of the nervous system, the climate is not unsuitable. There is much to commend the place to the less active and robust who desire to escape the wind and rain of the British Isles for a residential town twenty and a half hours from London, with beautiful scenery, comfortable quarters, and plenty of entertainment. It is an advantage to Montreux to have such stations as Glion (2,200 feet), Les Avants (3,200 feet), and Caux (3,500 feet), readily accessible by mountain railways where snow-sports can generally be indulged in from Christmas until about the middle of February.

TUCKER WISE, M.D.,
Diplôme Suisse Fédéral.

NOTICES OF BOOKS.

THE SPECIFIC DIAGNOSIS AND TREATMENT OF TUBERCULOSIS.

It is with pleasure that we welcome a new edition, the fifth, of Drs. Bandelier and Roepke's excellent textbook,[1] and especially as this is no mere reprint, but shows throughout careful revision and healthy expansion. The work has grown in a year from 250 to 292 pages, and its increased bulk is too valuable to be adversely criticized, especially since the use (common to German textbooks) of many sizes of type renders it so convenient as a book of reference. The introductory pages have been expanded by fresh references to the attitude, nearly universally favourable, of German medical authorities towards the use of tuberculin. The first part of the work, dealing with the diagnostic use of tuberculin, contains some additional facts about the subcutaneous method, and an expansion of the section on the "intracutaneous" reaction of Mantoux and Roux. This, in which the injection is made into the skin itself, appears to be the most certain of all the specific tests, but its use is greatly curtailed by the difficulty of its application and the very painful character of the reaction when obtained. In dealing with the subcutaneous method, much attention is bestowed on the "focal" reaction (*Herdreaktion*), or the increase of signs at the focus of disease, and its relation to prognosis. The authors look upon its appearance as a sign of "activity" of the disease, and cite figures to show that cases which give it run a less favourable course than those which do not. This unfavourable outcome might be ascribed by some to the focal reaction itself, but the authors affirm, without any reference to this apparent connection, that the focal reaction has never done harm, and the consensus of German opinion appears to support them in this. In the general introduction to Part II., which deals with tuberculin-therapy, some new pages are usefully devoted to the distinctive points in the action of the various tuberculin preparations. The number of these preparations makes such a description eminently valuable, and helpful to the practical man in search of a remedy. Careful details of dosage and administration are given, as in former editions, and the bacillus emulsion still claims their highest praise in the treatment of lung affections. In a description of Wright's method, which appears to be less and less used in Germany, they refer to the hypersensitiveness which is apt to occur during the use of "small" doses. The doses cited are not what we should consider very small, and they do not seem to have observed, what I have pointed out in an English journal, that it is the length of the interval which is the crucial point in the production of tuberculin anaphylaxis. Among the various methods of administering tuberculin here described, it is useful to observe that

[1] "Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose." By Bandelier and Roepke. Pp. 292. Fifth edition. Würzburg: Curt Kabitzsch, 1911. Price 6.60 m.; bound, 7.80 m.

German authorities are still agreed on the worthlessness of its administration by the stomach. They point out in this connection how other poisons, such as snake venom and tetanus and diphtheria toxins, are also practically without action when administered by this channel. We are interested, almost amused, to find that vaccine-therapy has at last found a place for itself (half a page!) in this edition. We have had occasion before to remark on the neglect of English and American work in this volume, and this is well illustrated by the fact that but three English references and only one American appear in a bibliography of 284 names. Vaccine-therapy has not taken root in Germany, but they will not look to England for information, and the sole personal reference under this heading is to a "Mischvakzine" for phthisis, introduced by Wolff-Eisner. The treatment of "localized" tuberculosis by tuberculin is also a weak chapter in a book otherwise excellent. This is partly due to the failure in Germany of the method of small dosage, so strikingly successful, when properly carried out, for cases of this nature. The subject of tuberculous peritonitis, a disease pre-eminently suitable for tuberculin treatment, is also woefully neglected, and receives no fresh attention in this new edition. At the conclusion is much new discussion on the tuberculin treatment of phthisis cases in their homes by the general practitioner. The authors rightly recommend the continuance in private of tuberculin treatment begun in the sanatorium; they also insist—we think with reason—that where tuberculin is begun in private the knowledge of a specialist should be utilized at the beginning of treatment. This is all advice in the right direction, and should tend towards the more extended use of a remedy whose value cannot now be gainsaid by fair-minded people. In this country the attitude towards tuberculin appears to me to run towards two generally disastrous extremes. On the one hand are those who treat it with systematic neglect, and on the other hand those who tend to bring it into discredit by failing to appreciate that it is the skill in its administration, rather than the remedy itself, which spells success or failure. To all of these, and, indeed, to the profession as a whole, we heartily recommend the perusal of this valuable textbook.

CLIVE RIVIERE, M.D.

A CLINICAL STUDY OF TUBERCULOSIS.

Drs. Bandelier and Roepke, in the foreword to their new work,[1] urge very strongly that the general practitioner is really the most important factor in the crusade against tuberculosis. Man is the great source of infection of man; and the aim must be to limit the source of infection by curing those who become infected. Success or failure depends upon early diagnosis of the disease; and for this early recognition of tuberculous infection responsibility rests with the general practitioner. It is essential, then, that the general practitioner be thoroughly versed in the early signs and symptoms of every kind of tuberculous disease. This is the keynote of the book. The authors have, in fact, produced what one might term a system of tuberculosis,

[1] "Die Klinik der Tuberculose." Von Dr. B. Bandelier, Chefarzt der Lungenheilanstalt Schwarzwaldheim-Schömberg, and Dr. O. Roepke, Dirig. Arzt der Eisenbahn-Heilstätte in Melsungen. Würzburg: Curt Kabitzsch (A. Stuber's Verlag). 1910. Price 9.50 marks.

since it covers the whole subject of tuberculous disease. The authors have aimed at putting before the doctor and student the essential features which characterize tuberculous disease in all parts of the body, particular attention being given to the question of early diagnosis and treatment. In a short review, it is impossible to deal adequately, or, indeed, in any detail with a work of so wide a scope. It can be safely stated, however, that the authors have achieved their object, and produced a volume of great value and interest, conceived and written in the best scientific spirit. The earlier parts of the book which deal with pulmonary tuberculosis will, perhaps, be of chief interest to the physician. In the chapter on "Paths of Infection" the authors give an interesting résumé and commentary on recent work dealing with the question of bovine and human infection. The authors conclude that bovine infection as a cause of pulmonary tuberculosis is practically negligible. With regard to the treatment of tuberculous disease generally, the authors are most emphatic as to the great value of tuberculin. They are of the opinion, however, that tuberculin treatment is best carried out in a sanatorium, and that the ideal is "the provision of sanatorium treatment along with specific treatment in all cases in which arrest and cure is reasonably possible." We learn from the authors that the "provision of accommodation for this treatment is in Germany so inadequate that some three-quarters of a million of tuberculous persons are at the present time unable to obtain it. The only hope for this large number of patients lies in home treatment combined with tuberculin, directed and administered by the general practitioner." The authors contend that there is nothing to prevent the general practitioner meeting with a large measure of success in the home treatment of this large class of patient. As a therapeutic measure, the authors recommend that tuberculin be given in gradually increasing doses, but that febrile reaction, as a result of each inoculation, should be, as far as possible, avoided. They aim at a final dose of from 5 to 10 milligrammes. With regard to the results of sanatorium treatment, the experience of the authors is that 88 per cent. of all cases are discharged "fit for work in the legal sense." After five years they find that the death-rate amounts to 20 per cent., and that 42 to 43 per cent. of the discharged patients are fit for work. These results are very comparable with the results obtained in this country. There are some interesting statistics in the chapter on "Results," dealing with the number of patients treated with tuberculin who are discharged with no tubercle bacilli in their sputum. The following are the figures: Stage 1, discharged free of tubercle bacilli, 100 per cent.; stage 2, discharged free of tubercle bacilli, 87·3 per cent.; stage 3, discharged free of tubercle bacilli, 44·2 per cent. These are better results than are to be obtained with sanatorium treatment alone.

NOEL BARDSWELL, M.D.

THE CONQUEST OF CONSUMPTION.

This is the title of Dr. Latham and Mr. Garland's medico-economic study of tuberculosis, the first edition of which was recently reviewed in this journal. We are now glad to welcome a new, revised, and popular edition, issued at a price which brings it within the reach of

all.[1] Consumption is much more than a mere malady—it is a disorder of social affairs, a source of heavy financial losses, a maker of national burdens. No longer can tuberculosis be considered only as a disease the study of which is to be restricted to members of the medical profession. This death-dealing social deranger and costly handicapper of human activities must be investigated in all its far-reaching influences. Such a work, therefore, as "The Conquest of Consumption" is one which should be read by all thoughtful men and women. It gives a reliable résumé of our present-day knowledge regarding the ætiology and prophylaxis of consumption, but it also provides a really serviceable contribution to the solution of the problem as how best to deal with it. It presents a strong case for Government inquiry and State intervention, and outlines a scheme whereby a comprehensive and effective campaign may be conducted with success. Many criticisms will assail the details of the authors' scheme, but up to now no more complete and promising proposals have been brought forward. The discussions provoked by this constructive policy will do much to prepare the way for effective progress. The present edition contains valuable tables of mortality from tuberculosis in Wales, which will be of service to those engaged in the anti-tuberculosis campaign in the Principality.

THE ANTI-TUBERCULOSIS MOVEMENT IN AMERICA.

Our cousins in the United States of America are conducting their tuberculosis campaign with courage and remarkable enterprise and adaptability. In no other part of the world is there greater sound sense and wiser expenditure manifest, and less fostering of mere conventionalities, in dealing with the Great White Plague. The recently issued bulky volume of "Transactions" issued by the National Association contains a fine record of progress.[2] Dr. Livingston Farrand, the Executive Secretary, gives some striking facts. There are in the States 431 societies in active work. The special tuberculosis dispensaries number 286, and there are 393 sanatoria and hospitals. It is estimated that there are 22,720 beds available for tuberculous patients. "Since May 1, 1909, eleven State Legislatures have been in session. In every one of these tuberculosis was a subject of consideration, and some law relating to the disease was passed. . . . A total of about $84,000,000 for the campaign against the disease was granted by the Legislatures." It would seem that "over 75 per cent. of the money expended during the current year will be from Federal, State, county, and city funds." The volume contains a valuable collection of articles dealing with such subjects as insurance against tuberculosis, the school-child and tuberculosis, phthisiophobia, results of sanatorium treatment of pulmonary tuberculosis in children, tuberculin tests and tuberculin treatment, tuberculosis of the bronchial glands, stereoscopic

[1] "The Conquest of Consumption: an Economic Study." By Arthur Latham and Charles H. Garland. New and revised edition. Pp. 159. London: T. Fisher Unwin, 1, Adelphi Terrace, W.C. 1911. Price 1s. net

[2] "National Association for the Study and Prevention of Tuberculosis. Transactions of the Sixth Annual Meeting. Washington, D.C. May 2 to 3, 1910." Pp. 440. Philadelphia, Pa., U.S.A.: The Press of Wm. F. Fell Company. Central office of the Association, 105, East Twenty-second Street, New York. Dr. Livingston Farrand, Executive Secretary.

radiography as a diagnostic aid in pulmonary tuberculosis, bovine and human types of the tubercle bacillus, and much else of scientific and practical importance. The volume is one which no student of the tuberculosis problem can afford to neglect.

SYPHILIS AND TUBERCULOSIS.

Syphilis and tuberculosis are two world-wide scourges of mankind, and both still baffle prophylactic art and therapeutic skill. Oftentimes a double infection occurs in the same subject. We are convinced that frequently in tuberculous subjects the syphilitic taint is overlooked, or at all events is left untreated. With the introduction of Salvarsan, the "Ehrlich-Hata remedy," or "606," it would seem as though a new medicament of real value had been discovered. We believe physicians treating tuberculous subjects who are also syphilitics would do well to carefully investigate the action of this agent. Dr. Eder has done a service in providing practitioners with an English translation of Dr. Bresler's valuable compilation of recent literature bearing on the treatment of syphilis by "606." The book is a thoroughly practical one, and will prove of service to many.[1]

MANUALS FOR MEDICAL PRACTITIONERS AND WORKS OF REFERENCE.

The "Medical Annual for 1911" has just been issued, and abundantly justifies its claim to be a "practitioner's index." It is now in its twenty-ninth year, and is in the full vigour of an effective maturity.[2] Each year this comprehensive volume renews its youth. It is an indispensable work for every doctor who desires to keep abreast of the times. This year's issue contains much of interest for the student of tuberculosis. Dr. J. J. Perkins writes the chief section on this disease, and details the most important of recent diagnostic tests and data regarding the employment of tuberculin and other agents. Dr. Priestley Leech deals with surgical tuberculosis, and wisely devotes considerable space to Calvé and Gauvain's work on the management of tuberculous abscesses of bone by conservative methods. Dr. Purves Stewart contributes the section on tuberculous meningitis in adults. The Annual contains a useful list of sanatoria for consumption. Among the special articles, Dr Reginald Morton's on "Radiology and Electro-therapeutics, X-ray Diagnosis and Radium," is of considerable importance, and Professor Collingwood's on "Harmonies" is of suggestive interest. Dr. Oscar C. Gruner contributes a well-illustrated article on "The Diagnosis of Morbid Tissues." The volume has been skilfully edited, and the publishers have done their part admirably.

Dr. Hurry's careful study of "Vicious Circles" deserves the

[1] "The Treatment of Syphilis by the Ehrlich-Hata Remedy (Dioxydiamido-Arsenobenzol): a Compilation of the Published Observations." By Dr. Johannes Bresler. Second edition, much enlarged, with portraits of Ehrlich and Schaudinn. Translated by Dr. M. D. Eder, with an abstract of the most recent papers. Pp. xii + 122. London: Rebman Limited, 129, Shaftesbury Avenue, W.C. 1910. Price 2s. 6d. net.

[2] "The Medical Annual: a Year-Book of Treatment, and Practitioner's Index." Pp. cxv + 991. Bristol: John Wright and Sons, Ltd. 1911. Price 8s. 6d. net.

thoughtful consideration of all medical practitioners.[1] It is an erudite work, full of originality, and yet every page bears witness to painstaking research. By a "vicious circle" the author means "a morbid process in which two or more disorders are so correlated that they act and react reciprocally on each other." These vicious circles Dr. Hurry deals with under the generic groups of organic, mechanical, infective, neurotic, chemicals, circles due to imperfect repair, and artificial circles. In dealing with tuberculosis, the author wisely shows that in many cases the influence of a neurosis militates against recovery: "Pour guérir de la tuberculose, il faut vouloir guérir, le vouloir bien, le vouloir longtemps." The volume is beautifully printed.

The new edition of Professor Pearson's work on surgical technique will not only be of considerable interest to all past and present students of Queen's (now University) College, Cork, but should be studied by house-surgeons and all operators, and, indeed, by all desirous of obtaining a complete and detailed account of the technique of a modern operating surgeon. In the new edition the whole work has been thoroughly revised.[2] A new chapter has been added on the standardization of disinfectants, and a special section has been devoted to the preparation of antiseptic solutions, emulsions, and the like. The work occupies a unique position among surgical manuals. It is well illustrated and admirably printed.

Mr. J. Cruickshank Smith has written a practical little manual regarding the making and application of paint, which may be recommended to those responsible for the upkeep of sanatoria and hospitals.[3] It is shown that zinc oxide, or, as it is frequently called, "zinc white," provides a reliable material of considerable hygienic value, non-poisonous, and of great durability. The work is a thoroughly practical one by an expert technologist of wide experience.

"Hazell's Annual" is perhaps the most comprehensive and generally useful of our year-books. It provides an authoritative and impartial guide to the chief topics of the day, and amply justifies its claim to provide "a record of the men and movements of the time." This year's issue contains serviceable lists of charitable and philanthropic societies, hospitals, and dispensaries, and particulars respecting a large number of professional organizations. A good section is devoted to "The March of Science," in which medicine and surgery are well represented. This is a work which should be within reach of everyone desirous of keeping in touch with the trend of human affairs.[4]

[1] "Vicious Circles in Disease." By Jamieson B. Hurry, M.A., M.D. Cantab., Ex-President Reading Pathological Society. Pp. xiv + 186. London: J. and A. Churchill. 1911. Price 6s. net.

[2] "Modern Surgical Technique in its Relation to Operations and Wound Treatment." By C. Yelveston Pearson, M.D., M.C.H., F.R.C.S., Professor of Surgery, University College, Cork. Second edition, revised and enlarged. Pp. xix + 484. With illustrations. London: John Bale, Sons, and Danielsson, Ltd. 1911. Price 10s. 6d. net.

[3] "Oxide of Zinc: its Nature, Properties, and Uses. With Special Reference to the Making and Application of Paint." By J. Cruickshank Smith, B.Sc., F.C.S. With a Chapter by A. P. Laurie, M.A., D.Sc. Pp. 112. No. 6 of "The Decorative Series of Practical Handbooks." Edited by Arthur Seymour Jennings. London: The Trade Papers Publishing Company, Ltd., 365, Birkbeck Bank Chambers, W.C.

[4] "Hazell's Annual for 1911." Edited by Hammond Hall. Twenty-sixth year of issue. Pp. lix + 592. London: Hazell, Watson, and Viney, Ltd., 52, Long Acre, W.C. 1911. Price 3s. 6d. net.

Among the new books likely to interest managers of sanatoria and those who direct the practical affairs of the open-air life are a number of "Annuals" dealing with gardening. Under the guidance of its Managing Director, Mr. Edward Owen Greening, the Agricultural and Horticultural Association, Limited, are accomplishing a valuable educational work. Their popular "One and All Garden Books" provide reliable information in a pleasing form and at a merely nominal charge. This year's "Annual" presents a comprehensive plan for converting the existing Horticultural Societies of the kingdom into centres of teaching and propaganda work, with the desirable purpose of rendering Britain "a Garden Land."[1]

The "Garden Annual"[2] is a thoroughly practical year-book. It provides an excellent almanack and directory for seasonal work, furnishes a list of nurserymen, seedsmen, and florists, gives the names of the principal gardens existing throughout the land, and supplies the names and addresses of the principal gardeners in the United Kingdom.

The "*Farm and Home* Year-Book"[3] contains articles of interest and service to all connected with farming. There are informing papers on the common pests of live-stock, the poultry industry, bees in relation to agriculture, dairying, humanized milk, and much relating to live stock. There is a good list of agricultural societies and shows.

The manufacturers of Horlick's Malted Milk have introduced an excellent set of Motor Maps for use in the British Isles.[4] These, we understand, are supplied on application gratuitously to medical practitioners.

The firm of Meister Lucius and Brüning, Ltd., have just issued an informing booklet on tuberculin preparations, and their diagnostic and therapeutic use. A copy will be sent to any medical practitioner.[5]

[1] "One and All Gardening, 1911." Edited by Edward Owen Greening, F.R.H.S. Pp. 128, with illustrations. London: Agricultural and Horticultural Association, Ltd., 92, Long Acre, W.C. 1911. Price 2d.

[2] "The Garden Annual, Almanack, and Address Book." Prepared under the direction of W. Robinson. Pp. 447. London: *Gardening Illustrated* Office, 17, Furnival Street, E.C. 1911. Price 1s. net.

[3] "Farm and Home Year-Book, and Farm Trade Directory." Pp. 287, with illustrations. London: *Farm and Home*, 17, Furnival Street, E.C. 1911. Price 1s. net.

[4] "Horlick's Motor Maps." Published by Horlick's Malted Milk Company, Slough, Bucks.

[5] "The Tuberculins and their Employment in the Diagnosis and Treatment of Tuberculosis." Published by Meister Lucius and Brüning, 51, St. Mary Axe, London, E.C.

PREPARATIONS AND APPLIANCES.

A NEW ORO-NASAL INHALER.

In the management of many cases of pulmonary tuberculosis and other affections in which the respiratory passages and lungs are involved, the judicious use of medicated inhalations often proves of considerable service. A new modification of the much-used and convenient form of Burney-Yeo Inhaler has been introduced by Dr. W. C. Minchin, of Dublin, who has kindly sent us the following description: "It has been my experience for some years in treating consumption by inhalations to find that all the inhalers which are available are much too close and badly ventilated, and that they very often bring about alarming symptoms when used in cases in which there are such symptoms as rapid respirations, dyspnœa, hæmoptysis, and cough. Some inhalers offer resistance to both inspiration and expiration, and there is consequent difficulty in breathing and cardiac embarrassment. This is specially noticeable when the respirations are rapid, and there is a corresponding rapid cardiac action. If we use these inhalers, then these symptoms are much increased. I have found that Dr. Burney-Yeo's inhaler, modified by having the sides almost entirely cut away, is very satisfactory. I have used it for years in this way, but I found that when I cut away portions of the sides, I so weakened the side-wings, that they spread upon the patient's face, and so often permitted the sponge to touch the patient's nose. In this difficulty I approached Messrs. Arnold and Sons, London, who entirely overcame the defect by binding the edges of the apertures in the side-wings with an edging of copper. This not only strengthens the wings, but also allows for necessary ventilation.[1] The result of the use

DR. MINCHIN'S ORO-NASAL INHALER.

[1] Dr. Minchin's Oro-Nasal Inhaler is supplied by Messrs. Arnold and Sons 26, 30, and 31, West Smithfield, London, E.C., at 1s. each, or 10s. per dozen.

of this inhaler shows that the close sides are not only harmful, but entirely unnecessary. The ventilated inhaler admits a sufficient quantity of pure air freely, and also readily allows of the expulsion of vitiated expired air without obstruction."

A PINE-BATH.

The exhalations from pines and pine-extracts have for long been counted as valuable and pleasing agencies in the preservation of health and in the recovery from disease. Pine inhalations undoubtedly are helpful in the alleviation and cure of affections of the respiratory passages. Pine-baths have also proved of benefit in the treatment of various rheumatoid conditions and as a restorative in states of muscular and nervous fatigue. A hot pine-bath is a hygienic luxury for the healthy, and provides also soothing and healing for the overworked and disordered. For many tuberculous cases, and especially for consumptives undergoing the open-air cure and engaging in work and exercise, a pine-bath is of great service. Such a bath can now be provided with the minimum of trouble and at little cost. Mr. John Askham has introduced in his "KLENITAS" PINE-BATH FLUID a means for the ready preparation of an effective pine-bath, fragrant in its aroma, invigorating in its action on the textures of the body, and withal most inexpensive.[1] We have used this preparation and can thoroughly recommend it. It should be used in all sanatoria and hospitals, and medical practitioners will do well to introduce it to their patients. It will be popular in schools, gymnasia, and among sportsmen, for it makes a hot bath after exercise a delightful refresher and an effective means for overcoming sensations of fatigue.

THE "SELFSPRA" SHOWER-BATH.

In the preservation of health and the management of many forms of disease hydropathic measures are often of the greatest benefit. In many of the best sanatoria, both in this country and abroad, elaborate baths and expensive hydro-therapeutic plants have been installed. The judicious use of baths undoubtedly is of much service as an anti-tuberculosis measure, and in not a few cases of tuberculosis a wisely ordered course of shower and spray-baths certainly assists in stimulating restorative powers and furthers the recovery of the patient. Hitherto the installation of a reliable shower-bath has usually meant considerable expense. Now, however, thanks to the ingenuity and resource of Messrs. Roper and Company, the well-known sanitary specialists, a comparatively inexpensive form of shower-bath is available for every home. Many persons residing in the country have been deterred from putting a bath into their home because of the heavy cost of plumbing, the lack of sufficient pressure from the water-supply, and the costly nature of structural alterations necessary for the provision of a bath-room. The "SELFSPRA" gets over all these difficulties.[2] It provides a portable, self-contained, easily-worked,

[1] "Klenitas" Pine-Bath Fluid is supplied by John Askham, 16, Brompton Road, London, S.W., at 2s. 6d. per bottle, or 30s. per case of one dozen, carriage paid.

[2] The "Selfspra" Patent Shower-Bath is manufactured by Messrs. Roper and Co., Castle Gate, Nottingham, at prices varying from £3 10s. to £10 10s.

highly-efficient, and cheap shower-bath. There is no complicated mechanism to get out of order. Hot or cold water is drawn by means of a small hand-pump into the arms of the top of the "Selfspra," from whence it descends in a fine shower upon the occupant of the bath. Curtains are provided, and splashing or damage to carpets is avoided. This effective contrivance will be a great boon in country houses, bungalows, club pavilions, schools, and colleges. We believe the "Selfspra" will be of much service in many sanatoria, and especially to those patients who are living the open-air life under the simplest conditions. Certainly all who have to advise in matters relating to personal hygiene, or who are responsible for the guidance of patients fighting their way back to health, should make themselves acquainted with the special advantages offered by this ingenious appliance.

"SANITAS" PREPARATIONS.

A valuable series of hygienic preparations suitable for use in sanatoria and hospitals for consumptives, and, indeed, in all institutions and private homes where tuberculous cases have to be dealt with, is now available under the general title of "SANITAS."[1] The "Sanitas" products are the result of scientific investigations carried out by Mr. C. T. Kingzett, F.I.C., F.C.S., a Past Vice-President of the Society of Public Analysts. "Sanitas fluid" and "Sanitas oil" are made by the oxidation of terpenes with atmospheric air in the presence of water, and are the two main preparations now sold by the "Sanitas" Company, Ltd. Precise investigations at the hands of such well-known authorities as Dr. J. C. Thresh, of the London Hospital; Dr. Eli Grimes, Bacteriologist to the Iowa State Board of Health; and Mr. C. G. Moor, M.A., F.I.C., F.C.S., author of "Applied Bacteriology," and other eminent scientists, have established beyond a doubt that certain proportions of "Sanitas fluid" and "Sanitas oil" suffice to destroy quickly and thoroughly the germs of cholera, anthrax, diphtheria, typhoid, pneumonia, plague, glanders, and other infectious diseases of man and animals. In addition to its germicidal action, "Sanitas fluid" is of service for the spraying of dwellings and sick-rooms, whereby the air is reoxygenated or revitalized through the liberation of comparatively large quantities of nascent oxygen, which is due to the presence in its composition of quantities of peroxide of hydrogen. "Sanitas fluid" is, in fact, equal to about a 2-volume solution of peroxide of hydrogen. It is non-poisonous, and this property, combined with its qualities as a germicide and an oxidant, and its fragrant and stainless character, renders it eminently suitable as a disinfectant, antiseptic, and sanitary reagent for household and toilet employment. "Sanitas oil" is useful in the treatment of lung and throat complaints, embodying as it does the active principles that are generated in pine and eucalyptus forests. It forms

[1] Full particulars regarding "Sanitas" products will be found in "Nature's Hygiene," by C. T. Kingzett, F.I.C., F.C.S. Fifth Edition. London: Baillière, Tindall and Cox, 8, Henrietta Street, Covent Garden, W.C. Price-lists may be obtained on application to the "Sanitas" Company, Ltd., Locksley Street, Limehouse, London, E.

the active principle of a large number of the "Sanitas" products—soaps, cream, tooth-powder, antiseptic gauze, wool, bandages, distemper, etc. A variety of soaps are available, all containing a requisite percentage of "Sanitas oil."

THE "SANITAS BACTOX" VAPORIZER.

A number of other useful hygienic preparations are also manufactured by the same company: Fumigators (bronchitis kettles), Moth Paper and Powder, Toilet Paper, Urinal Tablets, Deodorant Blockettes, Eucalyptus Disinfectors, and Spray Producers. The "Sanitas Formic" Preparations — as their name implies—are disinfectant preparations and appliances designed for the purpose of employing the well-known disinfectant and antiseptic properties of paraform and formaldehyde. Attention may be specially directed to the "Sanitas Fumigator." It is a conveniently small appliance, consisting of a lamp and a container holding 33 tablets of 99 pure paraform, which can be carried in the pocket, each one forming a complete unit sufficient for the disinfection of from 1,000 to 1,200 cubic feet of space. The "SANITAS BACTOX VAPORIZER," as shown in the accompanying illustration, is a simple appliance for the treatment of respiratory affections with creosotic vapours of "Sanitas-Bactox." We have had opportunities of investigating a number of the "Sanitas" preparations, and can thoroughly recommend them.

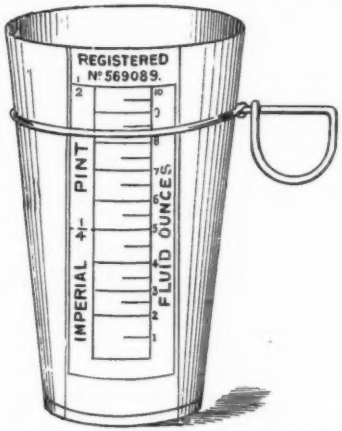
SARDINES FOR THE TUBERCULOUS.

Oils and fats are of the greatest value in treating tuberculous cases. Unfortunately some patients rebel, and manifest a distaste for cod-liver oil and other readily assimilated hydro-carbonaceous foods. For such the appetizing and nutritious "SKIPPER" SARDINES form an excellent means not only of stimulating the desire for food, but of actually introducing pure olive oil into the body. These sardines are caught in the fjords of Norway, and, after careful selection, curing, and preserving in the finest olive oil, are packed in air-tight tins.[1] The "Skipper" brand of sardine may be thoroughly relied on, and may be safely recommended to patients. In not a few sanatoria they form a popular item in the dietary. The fish are small, dainty, delicate in flavour, pleasing to the palate, and strength-giving. They may be served on hot buttered toast, or in many other ways likely to tempt the fickle appetite of the consumptive. They require neither boning nor scaling. We have no hesitation in advising medical practitioners and others responsible for the care of tuberculous and tuberculously disposed cases to make themselves personally acquainted with the many merits of "Skipper" Sardines.

[1] "Skipper" Sardines are supplied by Messrs. Angus Watson and Co., Sardine Specialists, Newcastle-upon-Tyne, from whom full particulars may be obtained on application.

COMBUSTIBLE SPITTOONS.

In the management of consumptives and as an anti-tuberculosis measure of the utmost value, it is of the greatest importance to provide an effective means for the collection and disposal of infectious sputum. The accompanying illustrations indicate a form of spittoon which will be of service especially for bed cases. The spittoon is

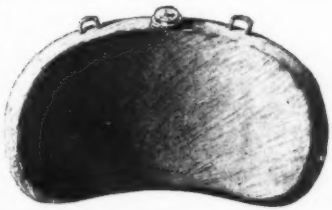


A COMBUSTIBLE GRADUATED SPITTOON.

translucent, waterproof, and is graduated, thus providing an easy means for registering the amount of expectoration excreted; and detachable handles and lids are also supplied.[1] A larger size is made for insertion in a nickel-plated receptacle to be hung against a wall.

THE "STOMO-TYN."

Under the somewhat fanciful name of the "STOMO-TYN" a really useful form of hot-water tin has been introduced.[2] The heater is made of strong tin, and is moulded so that it can be conveniently applied to the abdomen, thorax, back, or other parts of the body. It has been so designed that both weight and warmth are evenly distributed, and no undue pressure exercised on the parts to which it is applied. There are also two metal rings fitted to the upper portion, whereby the "tyn" can be readily attached to the patient, whether recumbent or assuming an upright posture. The appliance will be of great service in cases of abdominal derangement, pelvic disorder, dysmenorrhœa, and other



[1] The Combustible Spittoons are supplied by the "Papkerchief" Syndicate, 99-101, Kingsland Road, London, N.E. Prices 4s. 6d. and 5s. 3d. per gross.

[2] Supplied by Thos. Christy and Co., 4 to 12, Old Swan Lane, London, E.C., at 7s. 6d. each.

conditions associated with periodically recurring pains. We believe the "tyn" will also be of service in treating some cases of pleurisy and other thoracic diseases where application of heat brings alleviation. There is no doubt but that for many old, delicate, and convalescent cases this novel warmer will bring much increase in comfort.

MOCCASINS FOR OPEN-AIR TREATMENT.

It cannot be denied that open-air treatment is not exempt from serious discomforts. Many of the drawbacks can be obviated or entirely overcome by a rational preparation, and especially by the selection of suitable wearing apparel. Not a few patients undergoing sanatorium treatment suffer needlessly by a neglect to provide appropriate clothes and footwear. This is a matter which physicians and nurses are too apt to overlook. Saranac Lake, in the Adirondacks, has for long been a favourite resort for tuberculous patients and other health-seekers, and Messrs. W. C. Leonard and Co., the expert furriers and outfitters, have devoted special attention to the provision of suitable garments for this class of subject. We have recently had an opportunity of testing their SHEEPSKIN MOCCASINS.[1] These are ideal forms of footgear for patients undergoing the open-air cure. They are made from the best quality of sheepskin, with the heavy wool fleece retained in the inside. They can be worn over the ordinary shoe, or heavy woollen hose or home knit socks can be used. Moreover, they are most artistic in appearance. They should be known and used by patients in all our sanatoria. But they will be welcomed by those who are healthy and strong, for these moccasins form admirable and inexpensive footwear for both men and women when driving, motoring, or sitting out—as, for instance, when watching winter sports and the like. They also form good bedroom slippers. We think sizes should be made for children; they would be of splendid service for little scholars in open-air schools.

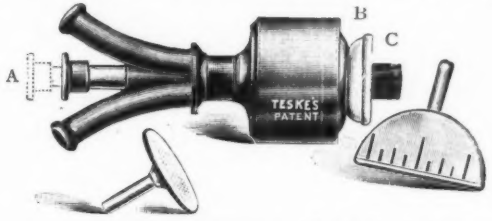
THE ART OF AUSCULTATION.

Many forms of stethoscope and modifications, or rather amplifications, of this invaluable clinical instrument are now available, but amidst the many, physicians will do well to make special note of Teske's patent "UNIVERSAL" STETHONOSCOPE.[2] It is a further development of older forms of Teske's Stethonoscope, the merits of which have been

[1] The Sheepskin Moccasins are provided in two sizes—6 inches at $1.00 and 10 inches at $1.50, post paid. Full particulars may be obtained on application to Messrs. W. C. Leonard and Co., 86, Main Street, Saranac Lake, New York.

[2] Every "Universal" Stethonoscope is manufactured at the Twentieth Century Works, London, and is tested and guaranteed by the inventor, and none are genuine unless bearing the words "Teske's Patent." Individual instruments may be obtained from the Hospitals and General Contracts Company, Ltd., 25 to 35, Mortimer Street, London, W. Price 25s. each.

approved by leading physicians throughout the world. The new "Universal" Stethonoscope is a single complete instrument without any detachable parts, but yet combines the services of three separate instruments, according to the manner of using it. The chief features of the instrument are shown in the accompanying figure. When the chest-piece is held in the customary position, and the ivory cup B is pressed *firmly* upon the body, the instrument acts as an ordinary stethoscope. By relaxing the pressure so that the cup B rests *lightly* on the body, the instrument becomes more sensitive, the sounds reach the ear intensified, and it acts as a stethonoscope. By keeping the thumb on the disc A, while drawing the body of the instrument upwards with the fore and middle fingers, the cup B is raised, and the black stem or contact-piece C (which serves as a localizer) projects beyond it. The instrument is now a phonendoscope, and the volume of sound transmitted can be accurately regulated by a slight move-



THE ABOVE SHOWS THE "UNIVERSAL" STETHONOSCOPE ABOUT THREE-FIFTHS ITS ACTUAL SIZE.

ment of the thumb, opening the orifice more or less as required. By the use of this ingenious appliance the ordinary stethoscope, the stethonoscope, and the phonendoscope can be used at will, and in succession, without removing the instrument from the patient; and it has the additional advantage that no part can be lost or mislaid. To facilitate the process of auscultation, two small adjuncts are, however, provided separately, either of which can be attached when desired. One is a flat circular disc 1 inch in diameter; the other a semi-circular piece engraved with a 1-inch scale for intercostal observations and measurements. Each has a metal pin fitting into the part C. The instrument is designed so that it can be held firmly in a comfortable position, and sounds caused by the friction of the fingers do not reach the ear. Lung-sounds, both normal and abnormal, are excellently conducted. The relative loudness of the normal heart-sounds can be accurately gauged, and cardiac murmurs, which would probably pass undetected by ordinary stethoscopes, are easily recognized. The instrument will be invaluable in all cases necessitating a careful auscultatory examination of the chest.

NOTES.

THE INTERNATIONAL TUBERCULOSIS CONGRESS AT ROME.

DR. J. J. PERKINS, the Hon. Secretary of the National Association for the Prevention of Consumption, has very kindly forwarded us particulars regarding the forthcoming Seventh Triennial International Congress against Tuberculosis, which meets this autumn in Rome:

"The arrangements for this country for the forthcoming International Congress against Tuberculosis, which will meet in Rome from September 24 to 30, 1911, have been placed in the hands of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, 20, Hanover Square, W. An Executive Committee has been formed for the purpose of arousing interest in the Congress in this country, and for collecting information, papers, and inducing local authorities to send delegates to be present. The following gentlemen have accepted a seat on the Executive Committee: Sir Shirley Murphy, F.R.C.S., Medical Officer of Health, Administrative County of London; Prof. William Osler, M.D., F.R.S., Regius Professor of Medicine, University of Oxford; Prof. G. Sims Woodhead, M.D., F.R.S.E., Professor of Pathology, University of Cambridge; Arthur Newsholme, M.D., F.R.C.P.; Dr. C. Theodore Williams, M.V.O.; Dr. T. Dyke Acland, F.R.C.P.; Dr. Hector W. G. Mackenzie, F.R.C.P.; Dr. E. W. Hope, Medical Officer of Health for City of Liverpool; Dr. Nathan Raw, F.R.S.E.; Dr. R. W. Philip, F.R.C.P.E.; Dr. J. J. Perkins, F.R.C.P., who will act as Hon. Secretary. A representative *National Committee* has also been formed, and the following are among those who have accepted a seat up to the present time: Her Excellency the Countess of Aberdeen; The Earl of Derby; Lord Blyth of Blythswood; The Director-General of the Medical Service of the Navy; The Director-General of the Army Medical Department; The President of the Royal College of Physicians; The President of the Royal College of Physicians of Edinburgh; The President of the Royal College of Physicians of Ireland; The President of the Royal College of Surgeons, Edinburgh; Sir James Crichton-Browne, M.D., LL.D., F.R.S.; Sir Isambard Owen, M.D.; Sir Alexander Christison, Bart., M.D.; Sir Malcolm Morris, K.C.V.O.; Sir John William Moore, M.D.; Sir Clifford Allbutt, M.D., Regius Professor of Physic, Cambridge; Sir John Byers, M.D.; Sir William J. Thompson, M.D., Registrar-General for Ireland; Prof. James Little, Regius Professor of Physic, University of Dublin; The President of the Royal College of Veterinary Surgeons; Dr. W. Collingridge, Medical Officer of Health, Corporation of London; Dr. Arthur Latham, F.R.C.P.; Dr. J. Edward Squire, C.B.; Dr. Cecil Wall; Dr. T. N. Kelynack, Editor of the BRITISH JOURNAL OF TUBERCULOSIS; Dr. T. D. Lister; James Berry, Esq., F.R.C.S.; Dr. P. S. Hichens, Northampton; Dr. Hogarth Clay,

Plymouth; Dr. J. B. Yeoman, Heswall; Dr. R. H. Urwick, Shrewsbury; Dr. Alfred Robinson, Medical Officer of Health, County Borough of Rotherham; Dr. W. A. Evelyn, York; Dr. G. A. Crace-Calvert; Dr. J. E. Esslemont; Dr. W. Arnold Evans, Medical Officer of Health, Bradford; Dr. M. S. Paterson; Dr. G. A. Heron, F.R.C.P.; Prof. E. J. McWeeney, M.D.; Dr. Reginald Pratt; Dr. Thomas Gambier; Dr. H. de C. Woodcock; Dr. John T. Wilson, D.P.H.; Dr. E. D. Evans; Dr. C. Muthu; Dr. S. G. Champion; Dr. Arthur Ransome, F.R.S.; Dr. N. C. Haring; Dr. H. J. Gauvain; Sir John Fagan; Dr. R. H. Woods; Dr. C. E. Wallis; Waldorf Astor, Esq., M.P.; C. H. Garland, Esq.; Miss McGaw; Miss Jane Walker, M.D.; Prof. Walker Hall, M.D."

The President of the Congress is Professor Guido Baccelli, and the Secretary-General is Professor Vittorio Ascoli, whose address is 36, Via in Lucina, Rome. The last International Congress against Tuberculosis, which met at Washington in 1908, chose Rome as the meeting-place of the Seventh Congress. The work of the Congress will be divided into three main sections: (*a*) Etiology and Epidemiology of Tuberculosis; (*b*) Pathology and Therapeutics (Medical and Surgical) of Tuberculosis; (*c*) Social Defence against Tuberculosis. Those desirous of taking part in the Congress are requested to fill up a form which can be obtained on application, stating therein the section for which they desire to enter their name, and enclosing with the form a visiting-card and a fee of 25 francs for a member's ticket. Members' relatives can obtain tickets at 10 francs each. The payment is requested to be made by international postal order, payable to the Treasurer of the Congress, and addressed to the Secretary's office. The members' tickets give their holders the right to obtain reductions in railway fares and admission to various social gatherings. The Congress will be opened in the large amphitheatre of the Augusteo in the presence of the King and Queen of Italy, but the meetings of the Congress will be held in the Castle of S. Angelo. It is to be hoped that Great Britain and her Dominions over Sea will be adequately represented. All the progressive countries of the world are arranging for the attendance of members. An American Committee of one hundred members of the National Association for the Study and Prevention of Tuberculosis, 105, East Twenty-Second Street, New York City, has been appointed, and preparations have been made for the special participation of the United States in the Exhibition of Social Hygiene, which will be held under the auspices of the Congress. It is expected that the Federal Government will also send official representatives to the Congress, and probably several of the States will take similar action. The headquarters of the American Committee are in the office of the National Association, New York City.

The Exhibition of Social Hygiene will be the most complete of its kind ever held. Among the different sections of the Exhibition are those on tuberculosis, general prophylaxis, history of the hygienic movement, and the prevention of disease in general. The Exhibition will cover a large area fronting Piazza Cavour. The authorities in charge of the Exhibition are planning to set aside a separate pavilion for the United States exhibits, provided these are numerous enough. All of the 500 State and local anti-tuberculosis committees

allied with the National Association are being asked to contribute to this Exhibition. Other bodies engaged in the campaign against preventable disease and for the betterment of public health will also be asked to co-operate.

Already committees similar to the one appointed for the United Kingdom and for the United States have been designated in over thirty different countries, and representatives at the Congress will be present from every civilized country in the world. The Exhibition and Congress will be part of a general celebration extending over several months to commemorate the founding of Italian liberty. The entire movement will be held under the patronage of the King and Queen of Italy.

THE CINEMATOGRAPH AND THE CAMPAIGN AGAINST CONSUMPTION.

In the fight against tuberculosis wise ingenuity is being displayed to discover novel means for the circumventing of the foe and the training

SMITTEN.

of the campaigners. The popular cinematograph exhibitions are now to provide a way for the instruction of the people. The Edison Manufacturing Company, Ltd., of Edison Works, Victoria Road, Willesden Junction, London, N.W. (City Offices: 25, Clerkenwell Road, London,

E.C.), have introduced a film (No. 6,722) under the title of "The Red Cross Seal." Through the courtesy of the Company we have been enabled to reproduce several of the scenes in this dramatic and educational story, and to quote the description given in the February issue of *The Edison Kinetogram* (vol. ii., No. 8, p. 6): "New York City with its five million inhabitants is quite naturally a city of extremes. Like all great cities, it touches the highest and the lowest in the social scale. Manhattan Island is a miniature world in itself. All the races of the civilized globe are housed between its waterways; extreme poverty stretches forth its hand in supplication to ample wealth; ignorance staggers blindly onward amidst monuments of wisdom; science shouts forth its warning cry to the deaf; self-sacrifice and suffering hide their wounds 'neath tattered rags, and the White Plague creeps into the darkened room and foul-smelling houses of the ignorant and of the unthinking, unwashed and unlistening, and calls its victims home. These are just the conditions that Edison's latest silent drama places before your gaze—not in a repulsive picture, but in one that is bound to reach the hearts and minds of millions. It is

THE TUBERCULOUS HOME.

OPEN-AIR TREATMENT.

a Kipling's begging poem of 'Pay, Pay, Pay' in silent drama. In silence it asks you for but one penny; it asks you to be a co-worker in stamping out the White Plague of tuberculosis in every quarter of the globe; it shows you actual conditions which exist in New York City, and the same is true in London and Paris and all the great commercial centres. Most of the scenes are actual reproductions from photographs. This picture is not a medical treatise, nor a Christian tract, but a strong dramatic story that brings the moisture to your eyes and leaves a smile of gladness on your lips. Here we are shown the girl of the tenement district who is struggling for existence in the poor quarters by painting designs upon paper-baskets and lamp-shades, and into whose life has crept a longing for a brighter future in the field of art. She visits a school of art, and learns that her poor wages are far too small to allow her to lift herself out of her present surroundings. Her sad face attracts the attention of a young man of wealth, and sets him thinking. He decides to see how the other half of the world lives, so, donning old clothes, he secures a room in a cheap tenement where she lives; and here a new world opens before his gaze—a world of poverty and want, a world of suffering

and sickness. He keeps his identity concealed, and watches the progress of events. He sees the young girl struggling for existence—sees her striving to win the prize of the Red Cross stamp design for Christmas time. He sees her success—she has won the prize. How bright the future is before her! And here he also sees what sacrifice means in its noblest form. She gives up her future, her little prize-money that means so much to her, so that her neighbour's son might be cured of the awful White Plague; and here the young man also sees that he has fallen in love with a noble, self-sacrificing girl. She does not know or even suspect that her greatest sacrifice has won for her a glorious future, a great love, and great riches until the closing scene of the drama. Intermingled with these views of the Silent Drama we are shown the actual conditions that breed tuberculosis, the work of the district nurses, the open-air day-camp of the Tuberculosis Association on the top of the Vanderbilt Clinic, the right way to live and the wrong way to exist. It shows the conditions of the tenement district, which are fast being done away with through the aid of the Tuberculosis Association and the good derived from the Red Cross stamps sold at Christmas time. A wonderful picture of appeal—a lesson—a drama. Not alone that, but the Edison Company is proud to say that this picture has the sanction of the National Association for the Study and Prevention of Tuberculosis and the American National Red Cross, and that if because of it a single individual buys one stamp more to decorate his Christmas gifts with, it has accomplished its purpose in presenting to the Moving Picture world a strong, sweet story of sacrifice and love."

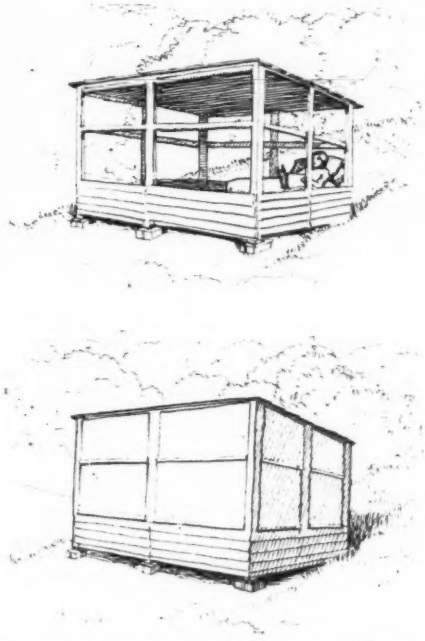
A COUNTRY HOSPICE FOR CHILDREN.

In the campaign against tuberculosis, no department is of more importance or richer in promise of success than that which concerns

OAKSHOTT HANGER.

itself with the protection of children. We are therefore glad to be able to insert particulars, which have been sent us by Dr. Harry Roberts, of an experiment which promises to bring health and happi-

ness to many little lives. The new residential home for delicate and tuberculously-disposed children is situated at Oakshott Hanger. This is a wooded hillside, four miles north of Petersfield, and about six miles south of Selborne, on the borders of Hampshire and Sussex. It is 750 feet above sea-level, and commands a twenty-mile view of beautiful wooded country. William Cobbett, in his "Rural Rides," spoke of this view as the most surprising and delightful he had ever seen. The subsoil is of chalk, and the climate is mild. The estate comprises thirty-four acres, twenty of which are untouched woodland, and the whole place is alive with flowers almost the year



SHELTERS IN USE AT OAKSHOTT HANGER.

through — violets, primroses, daffodils, wood-anemones, purple, spotted, butterfly, bee, and many other orchises, cowslips, oxeye daisies, marjoram, and thyme, carpeting the ground in succession. The district is celebrated for the variety of its birds. The treatment adopted is simple and natural. Seeing that many of the physical ailments of childhood are the result of indoor life, insufficient physical exercise, injudicious diet, or other hygienic errors, the aim is to provide conditions the exact reverse of all these. The children spend the greater part of their time in the open air, and nearly all the patients can sleep in shelters which, while affording protection from bad weather, are freely open to the air on all sides.

The diet is simple and abundant, consisting in most cases largely of milk, eggs, vegetables, and fruit. Mixed, fruitarian, or vegetarian diet is provided. Everything is done to make the place as homelike and as unlike an ordinary sanatorium or health-resort as possible. All patients are seen each week by the visiting medical officer, and, when necessary, patients are visited daily. The terms are exceedingly low. Children are taken from 15s. weekly, and a few adults from £1 1s. All correspondence should be addressed to the Lady Superintendent, Oakshott Hanger, Hawkley, Hants, from whom all particulars can be obtained.

A PURE-AIR SHELTER.

Dr. Halliday G. Sutherland, Medical Officer of the St. Marylebone Dispensary for the Prevention of Consumption, 15, Allsop Place, Upper Baker Street, London, N.W., has kindly furnished us with the accompanying plans and description of a new shelter for tuberculous cases which he has suggested. The first principle of open-air treatment is "the pure atmosphere freely administered without fear." Under ideal climatic conditions, this could best be attained by a life in the open, the patient sleeping literally under the stars. In a changeable and uncertain climate various forms of shelter have been devised to protect the patient from rain while still exposed to the open air. The defect in the majority of shelters is that they are constructed with a view to keep out the rain, whereas the first essential of a shelter should be to let in the air. Moreover, in some shelters the amount of air entering can be diminished by the patient, and if windows and doors be shut to keep out rain, the shelter is converted into a hut with little or no ventilation. Again, a very frequent defect is that the roof slopes downwards from back to front, constituting a *cul-de-sac* for the collection of polluted expired air. All revolving shelters, apart from mechanical difficulties, have the defect that their exposure is determined by the direction of the wind. The Pure Air Shelter is a timber structure, made in sections, easily put together, varnished inside, painted outside, and roofed with rubberoid. It is designed to insure that the patient never breathes the same air twice, there being through ventilation in all conditions of weather, as, even with the windows and doors shut, the shelter is open to the air over an area of 56 square feet. This is attained by the use of everted and inverted planes, fixed at an angle of 45°, and running round all sides, so that there is a constant exchange of air, while at the same time it is impossible even for driven rain to enter. When the patient is in bed, the current of air is directed over his head, and crosses the shelter diagonally. The use of these planes appeared to me to be the simplest structural method of insuring direct ventilation. The shelter faces south-east, the front having a large French window, while the back faces north-west, with a smaller window. The lighting is devised to give the maximum of sunlight in all positions of the sun, but avoiding the discomfort of the morning and evening sun striking the patient's eyes direct. Thus, the upper panels of the door are of glass, so that the early morning sun is thrown across the shelter, but not on the bed. A scale model of the Pure-Air Shelter is at present with the Travelling Tuberculosis Exhibition. The Pure-Air Shelter is designed

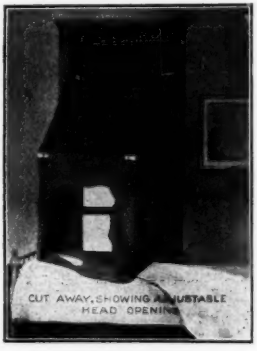
and constructed, according to my suggestions, by George W. Beattie, builder, 296, Sandycombe Road, Kew Gardens, by whom the design has been registered.

PLANS OF DR. HALLIDAY SUTHERLAND'S PURE-AIR SHELTER.

THE ALLEN HEALTH TENT.

Much ingenuity has been displayed in the endeavour to provide reliable means whereby the tuberculous patient may be enabled to live the open-air life at night and at his own home. Among the best

of these is the ALLEN HEALTH TENT, illustrated in the accompanying figures.[1] It is a contrivance which enjoys considerable popularity in the United States of America, and deserves to be better known on this side the Atlantic. Its purpose is readily seen from the illustrations. It seeks to provide the patient with fresh air without depriving him of the comforts and privacy of the bedroom. It may be used in connection with any ordinary bed and window. The tent is made of light-weight khaki cloth of compact weave, and permits a close fitting to be made around the edge of the window-casing. It shuts off the indoor air from entering the tent, and prevents cold air chilling the room, damping bedding, or interfering in any way with house-heating. The amount of bedding required for the comfort of the patient is therefore the same as in a closed room. The tent operates independently of the window-sash, permitting ventilation of the tent from both top and bottom of the window, also regulation by an adjustment of the sash up or down. The open window at top and



bottom completes the circuit of ventilation. The warm air of the room, coming in contact with the tent walls and slanting roof, gives additional aid in the circulation of the outdoor air. The head of the patient is introduced into the tent through an opening in the bottom. This base is light and mobile, and allows the patient to assume natural positions when asleep. An inexpensive hood made of cotton flannel protects the head, and, used in connection with an ordinary house shawl, gives full protection to the neck and shoulders during cold weather, without being in any way cumbersome. An attachment for raising and lowering the bottom of the tent adapts it to different heights of beds and thicknesses of pillows. This attachment also prevents flapping on windy nights. The pear-shaped opening in the bottom of the tent is easy of adjustment for convenience of the occupant. If the weather is cold, it is pulled up until the large end of the opening is comfortably placed under the chin ; the head lying on the pillow closes the remainder of this opening, and thus shuts out the cold air from entering around the neck. In hot

[1] The Allen Health Tent is manufactured by the Indoor Window Tent Company, 1,307, South Adams Street, Peoria, Illinois, U.S.A.

weather it is pulled down slightly for the purpose of admitting air around the neck, thus keeping the body cool. In case the patient wishes to look into the room, use a handkerchief, sputum cup, etc., this can be easily accomplished by slightly raising the head from the pillow and bringing the large end of the opening up to the forehead, so introducing the face into the room. An opening for inserting the hand into the tent is also provided. An observation window of celluloid is provided if desired. The tent when not in use folds neatly against the upper part of the window, thus admitting the usual amount of light and air into the room.

TUBERCULIN AND TUBERCULOSIS DISPENSARIES.

Much discussion has recently taken place regarding the function and benefits of sanatorium treatment, and the rôle of so-called tuberculin and tuberculosis dispensaries. The articles in the present issue of this Journal afford sufficient evidence that wide differences of opinion exist. Among the letters which during the last few months have flooded the correspondence columns of our contemporaries, we would draw special attention to the discriminating communications of Dr. R. W. Philip, of Edinburgh, in the *British Medical Journal* for February 25 and March 11. These deserve thoughtful reading. We have space here only for certain brief extracts, which, however, indicate the importance of maintaining a strictly judicial attitude when considering these disputatious problems connected with tuberculosis: "Vaccine-therapy and aero-therapy are not mutually exclusive. . . . To many communities in many lands the tuberculosis dispensary stands for the nucleus, the base of operations, and the *nodus* of the various factors which must be included in an effective anti-tuberculosis organization. . . . The roots of tuberculosis lie too deeply; they have too firm a hold. Their tenacity of life is referable to many elements in social environment which a dose of tuberculin cannot touch. For the *eradication* of tuberculosis communities must not trust to a vaccine, however effective it may be for a limited end. Nor should they restrict their outlook *separately* to notification, nor to the tuberculosis dispensary—wide as are its possibilities of service—nor to the sanatorium, nor the farm colony, nor the hospital for advanced cases. With a clear conception of the far-reaching issues, their endeavour must be to attain an effective combination of the needful factors in a well-balanced and co-ordinated scheme of prevention and treatment. Details may vary in different communities, but the purpose and comprehensive plan are constant."

PATHS OF PROGRESS.

On all hands there are evidences of an increasing purpose to study fundamental facts regarding the nature, prevalence, and manifestations of tuberculosis, and to reveal the influence of social and economic factors in its incidence and perpetuation. Many experiments are being attempted, with more or less success, to deal with those already smitten by the invading foe, but it is being recognized that a far-seeing and statesmanlike policy is necessary if adequate prophylactic measures are to be discovered and applied. The

desirability of arranging for some efficient State system of insurance against sickness and unemployment through accident or disease is now generally admitted; and it seems most desirable that, in connection with such an important national measure, the question of tuberculosis should receive special consideration. Dr. T. D. Lister has recently published two valuable papers, which all interested in this aspect of the problem should not fail to study.[1]

Many health authorities are directing their medical officers of health to prepare reports on the problem. Dr. F. W. Alexander, Medical Officer of Health for Poplar, has just issued a valuable document[2] which gives much information regarding tuberculosis dispensaries, sanatoria, municipal sleeping-huts and homes, tuberculin dispensaries, and the legal aspects of the question.

Dr. Mearns Fraser, Medical Officer of Health for Portsmouth, has issued a highly suggestive Report[3] on tuberculin dispensaries.

Dr. Wanklyn's Report[4] to the London County Council deserves study by all interested in the problem as presented in the Metropolis.

Dr. D. S. Davies, Medical Officer of Health for Bristol, has prepared a valuable Report[5] on the causation and incidence of tuberculosis, which contains much information regarding measures for the control of consumption.

Many medical officers of health, in their annual reports, are devoting considerable space, not only to the results of a study of tuberculosis in their own districts, but to a general presentation of the problem. Thus Dr. Nash furnishes a valuable epitome of the more important facts known in regard to the medico-sociological factors regarding tuberculosis.[6]

A considerable number of health authorities and voluntary associations are now distributing pamphlets giving instruction in simple language as to the prevention of tuberculosis, and directions as to the best way to deal with cases already affected. A good model has been issued by Dr. A. E. Thomas, Medical Officer of Health for Finsbury.[7]

It is to be hoped that many additional open-air schools for tuberculous and tuberculously disposed children will be opened this summer throughout the land. The Report of the Barnsley Open-Air School has recently been issued, and merits study.[8]

[1] Lister, T. D.: "The Treatment of Phthisis by Industrial Insurance, with Special Reference to the Benenden Sanatorium," a paper read at the Meeting of the Society of Medical Officers of Health, Friday, March 10, 1911; and "Phthisis as a Disease of Occupation," a Report read at the Second International Congress on Industrial Diseases, Brussels, 1910.

[2] Alexander, F. W.: "Crusade against Consumption." A Report presented to the Public Health and Housing Committee of the Metropolitan Borough of Poplar.

[3] Fraser, A. Mearns: "Tuberculin Dispensaries and Sanatoria." A special Report to the Council of the Borough of Portsmouth.

[4] Wanklyn: "Action taken by the London Sanitary Authorities with regard to Cases of Pulmonary Tuberculosis."

[5] Davies, D. S.: "Special Report on the Causation and Incidence of Tuberculosis." Prepared and printed by order of the Health Committee of the City of Bristol. Bristol: Jeffries, Sons and Co., Baldwin Street. 1910.

[6] Nash, J. T. C.: Annual Report of the County Medical Officer of Health for Norfolk.

[7] Thomas, A. E.: "Golden Rules for Persons suffering from Phthisis (Consumption)." Issued by the Borough of Finsbury Social Workers' Association.

[8] Sadler, F. J., S.M.O., and Donald, W. P.: Report on Queen's Road Open-Air School (Session 1910) to the Barnsley Education Committee.

The Charity Organisation Society[1] is doing good work for some of London's consumptive poor. Since 1902, when the Society took up the provision of sanatoria, 385 patients have been assisted. The method of working is as follows: The patient must have a good chance of recovery. He is examined and passed by a specialist in chest diseases, goes with the minimum of delay to a sanatorium, where he is generally kept as long as the doctor considers it desirable that he should remain; his family is provided for meanwhile, and on his return efforts are made to find him suitable work if his own occupation is unsuitable, or to improve the conditions under which he will have to work. The following sanatoria are used by the Society: Kelling Sanatoria, Norfolk; Brompton Hospital Sanatorium, Frimley; Maitland Sanatorium, Peppard, Oxon; Maltings Farm Sanatorium, Essex; and Boxgrove Cottage Sanatorium, Tilehurst. Six permanent beds are kept at Kelling Sanatorium. The average length of stay at the sanatorium is seventeen weeks and four days. It is considered that the results obtained justify the continuance of the work by the Society. The financial position is, however, a very serious one. The cost of the sanatorium work is shared by District Committees and the Central Council of the Society. The District Committee finds 15s. a week towards the cost of the patient's treatment, and has besides to find whatever money may be necessary to keep the family going. The money is raised on each case separately from relations who can help, clergy, employers, local charities, etc. The Medical Sub-Committee finds the balance of the cost of treatment—*i.e.*, 10s. to 15s. a week. For this purpose over £900 a year has to be found; of this sum about £50 is received in regular subscriptions, and the remainder must be begged for.

Much attention is being widely devoted to a statement of the essentials of the problem in the daily press; and such well-known writers as Mr. Hall Caine[2] and Mr. G. R. Sims[3] have been dealing with the question in striking phrase, likely to attract and move the ordinary reader of newspapers.

The hoardings now provide picture-galleries and open-air schools of hygienic instruction for the man in the street; even those who run may read. Our American cousins have been quick to understand and avail themselves of this new opportunity for providing an anti-tuberculosis education. The bill-boards of the United States are displaying 20,000 educational posters on tuberculosis, so we are informed. This will conclude the campaign begun a year ago, when the National Billposters' Association donated free space to the tuberculosis cause, the Poster Printers' Association offered free printing, and nine paper manufacturers gave the paper for the posters. The combined value of these several donations for this three-month campaign is nearly $100,000. The posters are in six different designs, and are all printed in three colours. They are 7 feet wide and 9 feet high. Already nearly 2,500 of these posters have been hung on the bill-boards of forty-six different cities, and it is planned to distribute

[1] Full particulars on application to the Charity Organisation Society, Denison House, Vauxhall Bridge Road, London, S.E.

[2] See articles in the *Daily Telegraph*, December 19, 20, and 22, 1910, and January, 10, 1911.

[3] See contributions to the *Referee*.

20,000 more before April 1 in over 400 towns and cities. Any anti-tuberculosis society in the United States may receive free of charge, except for transportation, as many of these posters as can be hung on the boards in its territory. The National Association, with the Tuberculosis Committee of the National Billposters and Distributors, are conducting the campaign. The statement is made, based on reports from all parts of the United States, that in 1910 nearly $15,000,000 was spent in the fight against tuberculosis, as opposed to $8,000,000 expended in 1909. The largest item of expense in 1910 was for treatment in sanatoria and hospitals, $11,376,500 being expended for that purpose, or more than double the amount for 1909. The anti-tuberculosis associations spent $760,500, and the tuberculosis dispensaries $889,000. The special municipal and State expenditures aggregate $1,750,000.

Our American cousins are demonstrating the reality of their convictions by a lavish expenditure of dollars. America means to hold the record in anti-tuberculosis work. April 30 of this year is to be held as a "Tuberculosis Day," and will be observed in 200,000 churches in the country in a manner similar to that of "Tuberculosis Sunday" in 1910, when over 40,000 sermons were preached on the prevention of consumption. The leaders of the movement hope to enlist 33,000,000 Church members through the States in this effort. Tuberculosis Day in 1911 will differ from the Tuberculosis Sunday of 1910. Instead of requesting the Churches to give to the tuberculosis cause a special Sunday service, the National Association is asking that meetings, at which the subject of tuberculosis and its prevention can be discussed, be held on Sunday, April 30, or on any other day near that date, either in the week preceding or the week following.